A STUDY OF CRITERIA IN THE EVALUATION
OF MILITARY LEADERSHIP POTENTIALITIES
IN A NROTC UNIT

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A STUDY OF CRITERIA IN THE EVALUATION OF MILITARY LEADERSHIP POTENTIALITIES IN A NROTC UNIT

A Thesis
Presented in Partial Fulfilment
of the Requirements for the
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BY

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TO

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TABLE OF CONTENTS

Introduction . . . . . Page 1

Statement of the Problem 5
The Leadership Problem 6
Basic Methods of Developing Substitute Criteria of Military Leadership 12
The Criteria Studied 17

Survey of Studies of Military Leadership 21
Approaches to the Leadership Problem 22
Leadership Evaluation:
By the Germans 25
By the British 26
By the Office of Strategic Services . . 27
Studies of Military Leadership by the Armed Forces 44

Development, Administration, and Scoring of the Criterion Measures 54
Nominations Questionnaire 55
Paper-Pencil Situations Test 59

Interrelationships of the Criteria 63
Statistical Procedures 64
Interpretation of Findings 79

Conclusions and Recommendations 83

Appendix 90

Bibliography 104

CHAPTER I

INTRODUCTION

For some time Naval Administrators, as well as those concerned with civilian management, have been occupied with the problem of group effectiveness and hence total group operation. What can the administrator do to enable a group of persons to attain a desired goal with the maximum efficiency and effectiveness? An assumption has been made in recent years that basic to this problem of group effectiveness is the commonly referred to phenomenon of leadership. In other words it is thought that some people when placed in leader positions will contribute more to group effectiveness than others and that through the selection, training and placement of leaders, group effectiveness can be improved. It may turn out in the end, however, that leadership plays a smaller part in group effectiveness than is commonly supposed. Nevertheless, such a line of reasoning is behind the keen interest and widespread research which the Navy is conducting on this subject. At the present time the Navy has a large leadership research project under way at the Ohio State University and the University of Michigan, in addition to the work being done by the Research Section of the Bureau of Naval Personnel. The ultimate aim of this and past research is the discovery of practical methods which may be useful in the selection, training, and placement of persons in positions of leadership. Basically the work done in the past and being done at the present time concerns itself with the development of measures for evaluating leadership potentialities.

The Holloway Plan, which was passed by Congress in 1946, instituted the selection and training of officer candidates for the Navy and Marine Corps by means of naval scholarships in fifty-two colleges and universities throughout the country.[1] This plan is administered by Naval Reserve Officer Training Corps Units (NROTC) established at the fifty-two colleges and universities selected for the program. It was intended that by 1950 these units would supply fifty percent of the officers going to the fleet, the remainder coming from the Naval Academy and through promotion from enlisted ranks. When this large percentage of potential leaders that NROTC units are required to furnish is considered along with the believed importance of a leader's contribution to group effectiveness, then it is important that here the best measures of leadership potentialities should be employed.

Complicating leadership evaluation in these units, however, is the fact that officer candidates spend so little time under the supervision of their naval superiors. In an NROTC unit, candidates spend only one hour a day under immediate supervision of superiors and this is usually spent in classroom recitation. Other time is spent under the supervision of college or university instructors or as desired. At the Naval Academy, on the other hand, candidates spend practically all of their time under the supervision of naval superiors. In addition they are observed in varied situations in and out of the classroom. At the Naval Academy then, it may be possible to evaluate

1 NROTC Bulletin of Information, Naval College Training Program, Training Section, Bureau of Naval Personnel, 1948, p. 4.

leadership potentialities by a subjective rating made by superiors but such is not the case in an NROTC unit. It is believed that superior officers do not have the time to become acquainted with all candidates. In addition there are not sufficient situations to observe each individual in order to make a subjective rating of his leadership ability. Because of this it is believed necessary to use additional ratings or measures in this situation if possible.

From present and past research a number of procedures and techniques have been developed for evaluating leadership potentialities. None of them have as yet definitely been validated for use in this situation. The writer however has selected two techniques which appear applicable and expeditious to this situation. It was hoped through a study of them in a NROTC unit to be able to conclude something about each of their uses and the relationship of results obtained to leadership ratings made by superiors.

The NROTC unit in which this study is made is that at The Ohio State University. The Junior Class of officer candidates in this unit, or midshipmen as they are called, was used for testing the two techniques chosen. Results obtained from the techniques were compared to ratings of individuals in the class made by their superior officers.

The basic methods of developing measures of leadership and the measures to be studied are discussed in the following chapter.

CHAPTER II

STATEMENT OF THE PROBLEM

THE LEADERSHIP PROBLEM

General: The greatest problem confronting researchers on the subject of leadership is to find an acceptable measure or standard so that it can be said that "this is good leadership" and "this is poor leadership." The task of developing such a standard is referred to as the problem of the criterion or, more generally, as the leadership problem. By over-simplifying, the main part of this problem may be shown in the case of the selection and training of gunners.

For example, if it is desired to find out which men in a group are good gunners and which men are poor gunners, it can be determined by giving each man a gun and a fixed amount of ammunition and having each one fire on a target. Individuals scoring a high number of hits on the target could be considered good gunners and those scoring a low number could be considered poor gunners. By using several groups in this way a measuring stick, a standard, or a criterion of good and poor gunners is established on the basis of the number of hits on the target per rounds of ammunition fired. In leadership then the problem is first to get the measuring stick, that is, something against which comparisons can be made as in this case of the gunners. Once the standard of a good gunner has been set it may be used for several purposes. These may include its use as a selection test, that is, in a predictive sense, or as a standard by which to validate other tests for predicting success as a gunner. In leadership, as in the case of the gunner, once an acceptable standard or criterion has been found it may be used as a selective device

itself or as a basis for evaluating other selective devices. It can also be used to make comparisons of individuals and to evaluate the results of training.

It is not intended here to make the leadership problem appear as simple as that of selecting gunners. All that is intended is to indicate that leadership requires a standard or criterion to make the term meaningful and the general purposes which it could serve are similar to those in the gunner situation.

In the industrial situation: In industry the leadership problem is somewhat closer to being solved than in the military service. If leadership is primarily an aspect of group effectiveness then the best ultimate criterion of leadership is the effectiveness of the group led. To measure good leadership and poor leadership, then, one should study group effectiveness in conditions where all other factors than leadership contributing to group effectiveness have been held constant. In industry there are some measures of group effectiveness which can be measured objectively to give a standard by which to evaluate leadership.[1] A list of such measures may include output per unit of time, quality of production, employee turnover, employee satisfaction, trainability, and the like. The manner in which these criteria can be used to differentiate good and poor leaders is as follows:

1 This does not mean that leadership and group effectiveness are the same thing, only that leadership is one of the factors influencing group effectiveness.

Several groups in a plant, factory, or office are made comparable by holding constant all factors influencing group effectiveness except leadership.[2] These groups are then studied according to some acceptable measure such as those listed above. By way of illustration, if the criterion used were output per unit of time and this were studied among several comparable groups, except for the persons in the leader positions (manager, supervisor, foreman, etc.) it is believed possible to attribute high or low output to the effect of good or poor leadership. The quantity of output then could be used as an objective standard of leadership. Once this criterion has been determined some kind of test may be developed to predict the success of individuals when placed in a position of leadership. This might be done by studying the groups having the highest and lowest output per unit of time to find out what the good or poor leader did or did not do in each situation. If certain behavior patterns are established as being significant, tests may be developed and if the good leaders, as determined by this criterion, score high (good) and the poor leaders score low (poor) consistently on the test, a selection instrument would have been developed for this situation.

2 A list of such factors will probably include "the formal organization of the group, its history, its physical environments, its goals or the difficulty of its problems and its rank and file membership." Campbell, D.T., Symposia for an Investigation Abroad Unit, Preliminary Draft, Naval Leadership Studies, Personnel Research Board, Navy, The Ohio State University, 1948, p. 2.

A study using measures of group effectiveness such as those mentioned above for developing a criterion of leadership has recently been made by the Survey Research Center of the University of Michigan among key clerical workers in the Prudential Insurance Company of America.[3] One of the overall objectives of this study was to discover the causal conditions making for a high level of group performance. Duplicate or comparable divisions and sections were studied and evaluated on the basis of productivity. This was measured by "computing the personnel cost for accomplishing a given amount of work".[4] After the high and low divisions and sections were determined, intensive interviews were conducted with all employees of the selected divisions and sections. This included seven hundred and forty-two persons in non-supervisory positions and seventy-three in supervisory and managerial positions. The findings of this study are in general that supervisors in high production work-groups differ from those in low production groups in that they:

"1. Are under less close supervision from their own supervisors.

2. Place less direct emphasis upon production as a goal.

3. Encourage employee participation in the making of decisions.

4. Are more employee centered.

3 Survey Research Center, University of Michigan. Productivity, Supervision and Employee Morale. Human Relations Series 1, Report 1, 1950, pp. 1-2.

4 Ibid., p. 2.

5. Spend more of their time in supervision and less in straight production work.

6. Have a greater feeling of confidence in their supervisory roles.

7. Feel that they know where they stand with the company."[5]

The steps have then been taken in this situation towards the development of a selection instrument. The criterion that is, productivity as a measure of leadership has been established in an objective way and behavior patterns as listed above of good and poor leaders have been determined. Ultimately it may be possible to develop predictive instruments. These instruments may include some form of paper-pencil tests or a simple performance test such as was illustrated in the case of selecting gunners.

In the military situation: A great advantage is held in the industrial situation over that in the military version when it comes to evaluating leadership. This advantage is that the ultimate goal of a group can be clearly defined and above all can be measured. That is, for a group of workers in a manufacturing plant the ultimate goal probably is related to the highest output per unit of time with the best quality and at the lowest cost. How well the members of a group attain this goal, which is the one they have been selected and trained for, can be measured by considering the quantity of output, the quality of the product, and the cost of the product being produced.

On the other hand, in the general military situation, the ultimate

5 Ibid., p. 3.

goal of a group is presumably some form of combat adequacy or combat efficiency.[6] In other words the ultimate goal of selection and training of general military personnel is the best possible performance of a group in the specific combat situation for which it has been trained. Unfortunately this goal is one that rarely can be measured. The field of battle is hardly a suitable place to be collecting data on the behavior of a group or an individual. Even if there were expert raters available the possibility of finding groups for study under similar battle conditions and situations would be very remote. Certainly no such objective measures as those cited previously in the industrial situation would be present.

In the general military situation therefore, substitute criteria or criteria must be relied on as a basis for evaluating leadership; that is, since an ultimate criterion has not been established, the best that can be done is to use a substitute criterion. H. E. Thorndike says that these must be judged in terms of their logical defensibility or in terms of their statistical characteristics rather than in terms of their relation to the ultimate criterion.[7] Such criteria, he says, can be rationalized on the basis of such

6 This appears to be the assumption in naval officer candidate schools. At the Naval Academy, for example, all candidates are given the same training, the assumption being that all will some day be placed in a combat situation. As far as it is known to the writer, this assumption is also the basis of selection of candidates. After graduation from the Academy, individuals may specialize in certain areas in which even the ultimate goal may not be combat adequacy or combat efficiency.

7 Thorndike, R.L., Personnel Selection and Classification, Report No. 3. U.S.Army Air Forces Aviation Psychology Program Research Reports, U.S.Govt. Printing Office, Washington D.C., 1947, p. 31.

factors as nearness of time to the ultimate performance, acceptance by supervisory personnel, directness of apparent relationship to the ultimate task, and the like. Thorndike points out that while it may appear that ratings by teacher examiners in combat operations would be used as the ultimate criterion such ratings are still a substitute. What is actually desired, he says, is knowledge as to how well the leader performs in the crucial situation for which he is trained.[8] This rejection of the teacher examiner's ratings is presumably because of such things as a lack of direct observation of performance and differences in value judgments. For example, one might agree to accept as one criterion of leadership in the airplane situation how well the command officer maintained the morale of the crew. But would an observer's report of how well he maintained the morale be as acceptable?

In the military situation, then, the leadership problem is further complicated by the apparent inability to establish an adequate ultimate criterion, making it necessary to work with substitute criteria, the exact relationship to the ultimate being unknown. Several basic techniques which have been developed for arriving at substitute criteria are briefly described below.

Basic Methods of Developing Substitute Criteria of Military Leadership

Group effectiveness techniques: In the Naval Leadership Studies at the Ohio State University there is to be used what is referred to

8 Ibid., p. 30.

as a group effectiveness type of criteria of military leadership. This technique utilizes available measures of group effectiveness. Some of the measures being considered (in a study of leadership in the shipboard situation) include "maintenance of combat readiness in equipment, training, morale, happiness among the ship's company, absence of conflicting factions, low operating expense in terms of equipment and personnel turnover, and the like."[9] By using these measures in a similar manner as was described in the study of clerical workers in the Prudential Insurance Company it is hoped to determine what may be called "good leadership" and "poor leadership" in this situation. Here several naval units, comparable in factors influencing group effectiveness such as history, situations, personnel, goals, problems, etc., are to be selected and studied.[10] Those units measuring high (good) in the above measures will be presumed to have a good leader and those measuring low (bad) to have a poor leader. From a study of the behavior patterns of good and poor naval leaders in the shipboard situation it is hoped to be able to develop evaluative procedures useful for the selection and training of future leaders. This is a new technique and it may well lead to the partial solution of the leadership problem. The criteria developed, however, are still substitutes, for what they are producing:

9 Campbell, D.T., Op. Cit., p. 2.

10 It is anticipated that more thoroughly experimental approaches will be needed in order to achieve the desired comparability of situation.

are perceptive measures of group effectiveness. The question left unanswered then is, "Are good perceptive leaders also good martime leaders?" Only through a validation study can it definitely be answered.

Reputational techniques: The reputational technique involves ratings, rankings, or nominations of persons for leader positions. It may be used by having superiors, peers, or inferiors making the judgment. The first of these, that is ratings, may be done by using any of several types of rating scales. Rankings simply involve ranking the members in some such manner as best to worst. Nominations usually involve making choices for the best leaders from among a group in answer to various types of questions. When ratings, rankings, or nominations are made by peers or associates, the reputational technique is referred to as sociometric, providing the individual making the rating, ranking, or nomination is known. In addition, when this technique is used among associates it is sometimes referred to as "buddy ratings".

Specific ways in which this technique is used will be described in Chapter III.

"Work-sample" techniques: The work-sample technique has received widespread acclaim in this country, particularly towards the end of World War II and since that time. Essentially it involves the observation of the performance of a group or the leader in several social situations. Situations are designed by psychologists and military

persons that are thought to be comparable to those that a military leader might normally encounter. For example, realistic combat missions are assigned to a group and two or three expert raters make subjective ratings of the performance of a group in proceeding toward a solution. Factors rated may include leader or follower tendencies, social initiative, effective intelligence, and, in general, how the leader handles the members of the group. This technique may be used in two ways.

One of these is called the "leaderless-group" situation. Here a group is given a task to perform such as blowing up an "enemy" held bridge or such as getting a solution to some discussion problem. One task is designed to measure an operational type of leadership and the other an administrative type. In both tasks no leader is assigned. The raters observe the performance and may note such things as who becomes the leader, how well he maintains that position and what he did or why he was selected as the leader in addition to those things mentioned above. Another way in which this technique is used is to give a group a mission or discussion problem with one of the members appointed as the leader. This is referred to as an assigned leadership situation.

Another name for the "work-sample" is the sociodramatic technique. Its use will be described in detail in Chapter III under leadership evaluation by the Office of Strategic Services. The one big disadvantage with this method is the large amount of time required in its application.

A recent variation of the "work-sample" technique just described is the paper-pencil situations test. The procedure used is to give each individual in a group a series of military leadership situations. These situations are on paper and after each situation, which is in the form of a problem, several solutions, usually five, are given. The individual indicates his reaction to each solution by making one of five choices. The choices are on a continuum from definitely accepting to definitely rejecting the possible solutions.[11] The response made to each solution of a situation is believed to indicate the type of individual being tested, i.e., consiferate, authoritative, passive, ego-defensive, or do-nothing. Other methods of giving this test are discussed later.

Trait listing technique: This approach to the leadership problem was quite popular for a time. The procedure used was to observe people who were thought to be good leaders and note what traits or characteristics they possessed. From a list of traits that they were found to possess it was thought possible to evaluate leadership in others by noting the degree to which they possessed these traits. The results of this approach have been very discouraging for it appears that persons in positions commonly defined as involving leadership have all kinds of traits. This technique will be further discussed in Chapter III under approaches to the leadership problem.

These four techniques, i.e., the group effectiveness measure-

11 See Appendix I for a copy of a paper-pencil situations test and instructions for taking the test.

10421

reputational, "work-sample", and the trait listing, are then the four basic methods used in developing substitute criteria of military leadership. Whether any of these four methods will lead to a solution of the leadership problem is still unknown. The trait listing approach, however, has largely been rejected. The writer therefore plans to apply two of the remaining basic methods of developing criteria of military leadership as described above, to find out whether they may be of any use in the evaluation of leadership potentialities of officer candidates in an NRCTC unit.

The Criteria to be Studied

The two basic methods which were used involve the reputational technique using nominations by associates (on a questionnaire), and superiors ratings, and the "work-sample" technique using a paper-pencil situations test. These were applied simultaneously in an effort to pick out the good and poor leaders from the Junior Class of midshipmen in the NRCTC Unit at The Ohio State University. Results obtained from these two methods were compared, the one with the other. By finding the interrelationship of the results obtained from the associates nominations, the paper-pencil situations test, and superiors' ratings it was hoped that the use of one of them would throw some light on the other. "In general", says Thorndike, "high correlation between intermediate (substitute) criterion measures will tend to strengthen the rational basis for accepting either of them as a useful criterion, since each will then receive some support from the rational justification of the other. Lack of correlation may tend to weaken one or both of the measures except insofar as they measure

distinct aspects of performance for which there is no rational basis to expect interrelation."[12]

The two special devices chosen, i.e., the nominations questionnaire and the paper-pencil situations test appear to be applicable, judging from previous use, as well as expeditious measures and could be administered by these units. Both of them have been used previously. The nominations questionnaire technique similar to the one applied here has been used by Army and Marine Corps Officer Candidate Schools and the Office of Strategic Services during World War II. It was used both as a basis for predicting success in officer training and as a combat officer and for the validation of various selection instruments. How it was used and the results obtained are discussed in the chapter to follow.

The paper-pencil situations test used in this study was developed by F. H. Sanford and J. R. Hemphill.[13] A copy of this test is included in Appendix I and it is described in a later chapter.

This test was first used in evaluating the results of a training course in leadership given at the Naval Academy. It has also been used in the Naval Leadership Studies at The Ohio State University.[14]

12 Thorndike, R.L., Op. Cit., p. 38.

13 Sanford, F.H. and Hemphill, J.R. An Evaluation of the Test "Thoughtless for Naval Leaders" Used in Leadership Training at the Naval Academy. University of Maryland, College Park, Maryland, 1948, pp. 6-7.

14 Campbell, D. T., Op. Cit., p. 7.

In the latter case it was used for the purpose of getting the reliability of responses made by individuals on this test to several other research tools used, including a motivation questionnaire and ratings by superiors. The test is based upon the assumption that the desirable naval leader is one who exhibits a certain reaction to the given solutions for the several military situations. In other words it is thought that the good leaders accept those items on the test believed to indicate definite and considerate action and to reject the authoritarian, passive, ego-defensive, and do-nothing items.

It is not intended that such a study as this would definitely establish that one or both of the special instruments used are valid measures of leadership potentialities. This could not be done without a follow-up study, observing actual performance in the field. Conclusions given in this study must therefore be based on the investigations of several hypotheses given below.

1. Superiors and associates tend to rate the same persons high (good) in leadership potentialities.
2. Persons scoring high (good) in the paper-pencil situations test also are rated good by superiors or associates or both.
3. Associates tend to rate desired friends higher in leadership potentialities than others.
4. Accepting tend to accept leaders on the basis of rendering assistance.

5. Superiors tend to rate leadership as an aspect of academic achievement.

6. Superiors and associates tend to think of leadership as a general characteristic rather than there being several types of leadership.

In such a study as this the "work-sample" technique in operational outdoor and indoor situations probably should be used. If it had been, that technique could have served as an additional check on those persons rated high or low by superiors, and associates and those persons scoring high or low in the paper-pencil situations test. Unfortunately it could not be included in this study because of the necessity of rearranging class schedules of the midshipmen and the time and materials required. Some recommendations as to how it might be used in NROTC units are given in the concluding chapter.

The chapter to follow reviews the work that has been done by those who have engaged in research on the subject of military leadership, and the uses that have been made of the basic types of criteria employed.

CHAPTER III

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In surveying studies on military leadership, it is believed desirable first to present the two general schools of thought as to just what leadership is and how it can be measured. The theories of several prominent persons in the field are given first, followed by examples of leadership evaluation in Germany and Great Britain. Then procedures used in evaluation by the Office of Strategic Services during World War II and the various branches of the Armed Forces of the United States are given, along with results obtained where available.

Approaches to the Leadership Problem

The first approach is based upon the assumption that a leader is one who has certain qualities and traits. There has been a large volume of research which has tried to isolate and measure traits of leadership, predict the behavior of those who have them, and to train persons in those which are teachable. The results of this approach have been very discouraging for it appears that men in leadership positions have all kinds of traits which vary tremendously. Even if examples are found of superiority or difference in a given trait there are equally numerous examples of individual leaders who are exceptions to the rule. Indeed, it cannot be reliably established that leaders have even a typical combination of traits.

The second approach, suggested as early as 1940 by H. H. Jennings, to which several others have subscribed, is that leadership is a result of the interaction between individuals and is specific to the

situation.[1] This approach is now well established as is evidenced by the writings, all since 1947, of several experts on the phenomenon of leadership. Their views are quoted below.

> "Leadership is specific to the particular situation under investigation. Who becomes the leader of a given group engaging in a particular activity and what the leadership characteristics are in the given case are a function of the specific situation including the measuring instruments employed. Related to this conclusion is the general finding of wide variations in the characteristics of individuals who become leaders in similar situations, and even greater divergence in leadership behavior in different situations."[2]

> "Leadership is not a matter of passive status, or of mere possession of some combination of traits. It appears rather to be a working relationship among members of a group, in which the leader acquires status through active participation and demonstration of his capacity for carrying cooperative tasks through to completion."[3]

> "Functional leadership places emphasis not on a fixed set of personal characteristics nor on particular kinds of leadership behavior, but upon the circumstances under which groups of people integrate and organize their activities toward objectives, and upon the way that integration and organization is achieved. Thus the leadership function is analyzed and understood in terms of a dynamic relationship. . . . Evidence and speculation to date make it appear that this functional or operational conception of leadership provides the more useful approach."[4]

> "Leadership has usually been thought of as a specific attribute of personality, a personality trait, that some persons possess and others do not. . . The truth would seem, however, to be quite different. In fact, viewed in relation

1 Jennings, H.H., Leadership and Isolation. Longmans, Green & Co., New York, N.Y., 1943, p. [illegible].

2 Jenkins, W.O. A Review of Leadership Studies with Particular Reference to Military Problems. Psychology Bulletin, [illegible], 1947, p. [illegible]. (Orig. phtchd 1941).

3 Stogdill, R.M. Personal Factors Associated with Leadership: A Survey of the Literature. Journal of Psychology, [illegible], 1948, p. 53.

4 Wickerbacher, I., Leadership: A Conception and Some Implications. Journal Social Issues, [illegible], 1948, p. [illegible].

> to the individual, leadership is not an attribute of the personality but a quality of his role within a particular and specified social system. Viewed in relation to the group, leadership is a quality of its structure. . . There is much in the observation of the group situation to confirm the general agreement among students of leadership that leadership and its traits are relative to the situation. . . The characteristics which make for an individual's being propelled to leadership status in a group of which he is a member are any or all of those traits. . . which enable him to make an instrumental contribution toward the group's progress. . . It is natural that some individual attributes of skill and personality will be generally effective though they will not confer upon their possessor universal leadership status (regardless of the situation)."[5]

According to these views it is unfortunate that this idea of the situational approach did not find its way into the techniques of selection used by the Armed Forces until late in the war. If it had, it might have been adequately validated. If the above views are accepted then present techniques may be a waste of time until a job analysis has been made of all possible jobs and the present techniques adapted to fit the situation or new ones developed.

It may be well to point out here that in the Navy the view appears to be taken, at least in actual practice, that leadership is a general characteristic which may be evaluated in the same way under all circumstances regardless of the type of military situation involved. This is evident from the type of rating scale now being used throughout the naval service which allows evaluation without reference to any particular situation.

5 Gibb, C.A. The Principles and Traits of Leadership. Journal of Abnormal and Social Psychology, 42, 1947. pp. 267, 270, 284.

Leadership Evaluation

By the Germans: To the Germans, perhaps should go the credit for the introduction of a very useful technique in evaluating leadership which was later to be copied and improved upon by both the British and American armed forces. Ansbacher has summed up the method used in a report, made in 1941, as follows:

> "The method is always the attempt to place the testee in realistic situations where his entire behavior is rated with emphasis on personality. This rules out exact measurements. Objectivity is attested instead by requiring the agreement of several examiners in the interpretation of the behavior symptom before it is considered indicative of a trait. Within the delimitation of the qualitative method, the procedure is psychologically sound and is likely to be an effective selection device. . . From many samples of behavior, symptoms are observed. From a number of symptoms, conclusions as to a personality trait are drawn, and judgment of a trait is not made until it seems to fit with the picture of the total personality. Thus, every test item, be it designed as an intelligence test or one of motor performance, is used to judge the personality."[6]

The details of the German selection program are reported by Eaton and Jenkins somewhat as follows: A two day testing period administered by a board made up of a colonel, a medical officer, and three psychologists; techniques included life history analysis, expression analysis (voice, appearance, handwriting, etc.), intelligence and interests tests, various physiological reactions tests, projective tests, and two types of performance tests — tests in which the candidate was given complicated orders and required to carry them out and leadership tests in which the candidate had to supervise a group of men in the performance of some task. Included in the procedure were also round-

6 Ansbacher, H.G. German Military Psychology. Psychological Bulletin, 38, 1941, pp 37[illegible]-3[illegible].

table discussions between the candidate and staff and off-hour observation under normal social situations. The examining board made a subjective judgment of each individual and then gave its recommendations to the superior commander.[7,8]

By the British: About 1941, according to C. A. Gibb, the British began to feel the necessity of measuring individual effectiveness in inter-group relationships. This was based upon the conviction "that recognition of leadership potential depended largely upon direct observation of inter-personal reaction within the group situation."[9,10] Consequently in 1942, War Office Selection Boards, which consisted of three officers, two military and one psychiatric, were set up to select candidates for Officer Candidate Schools. Each board observed a group of seven to eight candidates over a period of three to five days. In addition to the regular selection devices such as intelligence test, questionnaires, interviews, etc., three performance tests were used. These included an individual performance test on such things as personal courage, speech, etc.; group leadership tests in which an individual was appointed as leader and given a simulated combat mission to perform, including the plan of attack, defense of

7 Eaton, J.W. Experiments in Testing for Leadership. American Journal Sociology, 52, 1947, pp. 523-35.

8 Jenkins, W.O. A Review of Leadership Studies with Particular Reference to Military Problems. Psychological Bulletin, 44, 1947, pp. 54-79 (Orig. pub. 1946).

9 Gibb, C.A. The Principles and Traits of Leadership. Journal of Abnormal and Social Psychology, 42, 1947, p. 275.

10 Eaton, J. W. Op. Cit. pp. 523-35.

the plan and assignment of duties of members of the group and 'leaderless-group' tests in which a simulated combat task is assigned to a group without a leader being appointed. All information was brought together at a board meeting and a final mark was given on the total personality.

The establishment of the validity of the procedures employed is not completely adequate. Results were correlated with success in Officer Candidate School only. The follow-up showed an increase from 22% to 34.5% in the proportion of all cadets rated above average (comparing with previous unselected groups) and a decrease from 34.6 to 8% of those who were rated below average, based on 1200 cadets. Also there was a decrease from 14.5% to 2% of those rated unsuitable at the end of the training period.

Procedures similar to these were adopted and used by the Australian Army but as far as is known, no follow-up study has been made.

In the Office of Strategic Services: As a convenient starting point in surveying the studies of military leadership made in this country, the techniques used by the Office of Strategic Services during the recent war will be described. This is one of the most ambitious experiments in the assessment of individual personality made by Americans. Some of the procedures used by OSS are similar to those used by the British, to whom OSS gives credit. In the interest of brevity, only those procedures directly concerned with leadership potentialities will be described. To understand how the O.S.S. Assessment

Program was organized some background information is necessary.

The Office of Strategic Services maintained what were called assessment stations in this country and overseas. The time required for assessment varied from station to station, some being as little as one day. At Station S, a large farm near Arlington, Virginia, which is the one considered here, the time required was three days.

Recruits for OSS were gathered from the various branches of the Armed Forces and directly from civilian life. All were dressed in Army fatigue clothes prior to reporting to S so that neither officers, enlisted men nor civilians could be distinguished. No one was allowed to tell anyone who he really was. In fact, each person made up a cover story to keep his real identity from being known. The whole period of assessment was maintained in a comfortable and informal atmosphere and the staff as well as the group all had a good opportunity for observing each other during work and play.[11]

Procedures Used

General: In all, seven procedures were used for rating leadership at Station S. Five of these were situational tests of which three (Brook, Construction, and Assigned Leadership) "provided an opportunity to observe behavior in a field problem, while two (Discussion and Debate) were designed to reveal qualities of leadership in an indoor situation and in the give-and-take of verbal argument. One of the two remaining procedures permitted each candidate's leadership to be rated

11 The O.S.S. Assessment Staff, Assessment of Men. Rinehart and Company, Inc., New York, 1948, pp. [illegible].

by his peers (ratings by associates) and the other yielded a rating by the member of the staff who had reason to know him best (interview)."[12] All of the data obtained from these procedures, plus any other available information, were brought together at a staff conference where each man was graded on a six point scale of very inferior, inferior, low average, high average, superior, and very superior. The intercorrelations of the final ratings and of individual ratings obtained by the above procedures are given in the table below.

Intercorrelations of Leadership Ratings
at OSS Assessment Station S [13]

* Periods F-G; ** N = [illegible] to [illegible]

	Final Leadership Grade	Interview	Brook	Construction	Discussion	Debate	Assigned Leadership	Ratings by Associates
Final Leadership Grade	-	.79	.68	.54	.64	.66	.63	.65
Interview	.79	-	.57	.44	.48	.47	.53	.54
Brook	.68	.57	-	.37	.47	.41	.42	.41
Construction	.54	.44	.37	-	.30	.33	.33	.24
Discussion	.64	.48	.47	.30	-	.56	.37	.41
Debate	.66	.47	.41	.33	.56	-	.39	.52
Assigned Leadership	.68	.53	.42	.33	.37	.39	-	.37
Ratings by Associates	.65	.54	.41	.24	.41	.52	.37	-

* For convenience of reference the assessment program at S was divided into seven periods. Data given is for the last two periods F and G, of its operation.

** N equals the number of men involved.

12 Ibid., p. 301.

13 Ibid., p. [illegible]. For a brief discussion of interpretation of correlation coefficients see Chapter III.

Each of the seven procedures used are briefly discussed below.

Leaderless-group situation - Brook test.[14] The leaderless-group situation used in this technique was conducted at a brook, about eight feet wide, that ran through the farm. A group of candidates, usually about five or six, were given the mission of transporting a "delicate instrument" to the other side of the brook and of bringing back a box of "ammunition." The brook represented a raging torrent and was assumed to be too deep and too fast to rest anything on the bottom of it. Scattered around the area were pieces of material such as boards (not long enough to reach across the brook), rope, a pulley and a barrel with both ends knocked out. Candidates were not allowed to jump across the stream. Ten minutes were given for the group to decide on a plan and as much as thirty minutes to complete the task.

During this situation the Assessment Staff was able to make several observations about the leadership qualities of the candidates. They could observe how an individual became the leader, who started out as the leader, how well he retained this position if at all, how well he received the cooperation of the group, whether the members were content to follow instructions or worked themselves into the leader position. Here it could be observed how the leader changed as the situation changed, that is, if the situation depended primarily upon the manipulation of physical objects a man might at this may have become the leader or if one candidate advanced a good idea that was

14 Ibid., pp. 90 ff.

asserted and it worked, he may have become the leader. The staff also was able to observe two types of leadership. These were leadership assertion and leadership efficiency. Both were demonstrated, for example, when one individual took the leadership for a time and then lost it because the group turned to another individual, although quieter, but who had offered suggestions that had worked. Although the quality of leadership was varied, usually, it was noted that the leader was one who stayed close to the work or who selected one or two "lieutenants" to collaborate with him in directing the affair.

"Leadership assessment" situation - Wall Test:[15] In another situation the mission was to cross a barrier, which consisted of two wooden walls, ten feet high, fifteen feet long (candidates could not go around it), eight feet apart, and carry their "kingpin bracket" (log) with them. To make the situation realistic the group was told that it was like the great wall of China, that the space between the walls represented a canyon two hundred feet deep and that they were escaping from Japanese soldiers. In this test also material was placed in the area for use in accomplishing the mission.

As in the Dress Test, the staff was able to observe the same leadership qualities. Thus this test served as a check on the outcome of the first. One interesting point in the Wall Test was that the first man to get to the top was in an excellent position to control the situation. The staff observed that this required primarily physical agility

15 Ibid., pp. 79 ff

and if this were the only qualification of the first man he soon lost his advantage when another with more aptitude for leadership got up beside him. Time allowed to complete this task was one hour.

Assigned leadership situation - frustration test:[16] In still another situation one candidate was taken at a time and the task was for him to build a frame structure out of simple wooden materials in ten minutes. He was to have two helpers but they were in reality two members of the staff. Both of them did everything they could think of to confuse the candidate by humiliating him, by making sensitive personal remarks and doing only that which the candidate specifically directed them to do. Just about all possible ways of needling the candidate and making him feel foolish were employed. During the entire program at S, no one actually completed this task. Occasionally men were so aggravated that they took a swing at one or both of the helpers.

Although it appeared that this situation measured emotional stability and frustration tolerance better than leadership ability, this test gave the candidate an opportunity to demonstrate leadership. Such things as to whether the candidate introduced himself to the helpers, found out their names, and explained the entire job to be done to them, were used in the evaluation of the candidates qualifications. As the test progressed it appeared to be one which measured more of capacity to work toward completion of a task in the face of increasing pressures

16 Ibid., pp. 102 ff.

furnished by the helpers than actual leadership.

Assigned leadership group situations[17] There was included a series of situational tests in which each man in a group was assigned the leader position in turn. These tests like the Break and the Wall tried to approach as nearly as possible a realistic operational problem. The reason for giving the assigned leadership situations was because it was felt that in the Break and the Wall situations, in which no leader was appointed, a premium was placed on initiative and assertiveness. Therefore some candidates who tried to gain authority never attained it and it was impossible to determine just what they would do if placed in full charge of a project. Moreover, those who did attain the leader position in the "leaderless-group" situations constantly had to devote a good deal of attention to maintaining their status and therefore were not able to marshal their planning, organizing and executive abilities to the fullest extent. The assigned leadership group situations were then used to observe the candidate's true ability when a position of authority was assigned to him.

Some of the missions to be performed were: To cross a "mined" road without leaving any traces of crossing; to set post a sentry; to get some valuable papers out of an agent's house in "enemy" territory; to get across a stream of water where the bridge intended to be used for the crossing had been demolished; and another was to kill the mayor of a town in "enemy" territory. Occasionally, in some of these situa-

17 Ibid., pp. 147 ff.

tion, the assigned leader was "captured" to see what the reaction of the group would be, for example, who would become the leader and whether the group would go ahead with its mission or try to recapture the original leader.

These situations enabled the staff to rate leadership by observing whether the appointed leader held his position throughout. The manner in which he conducted the discussion of the various possible solutions gave insight into his ability to organize them as well as to spur the group on to action. It was felt desirable to observe how the leader delegated authority; how confident he was of his own plans; how the leader reacted to sudden threat of failure and how inventive and resourceful he could be in meeting it. By his approach to the problem the staff could tell how impulsive or cautious he was, how he organized his men, how he reacted, when another man was in a position to assume his role. Staff members also observed the judgment, discretion, and loyalty of a quickly appointed leader, how he went about planning and handling such an operation, how much freedom he allowed his men when it was necessary for the group to split and what were the methods he designed to maintain control, what was his capacity for detail, his foresight, his adaptability, the rigidity with which he adhered to his original plans in the face of emergencies, and changed conditions, the extent to which he discussed problems with his subordinates, his capacity for quick and independent decisions, his responsibility to his men and the mission, and his decisiveness. The staff was able to rate other members of the group on their ability to cooperate

in the planning and execution of a mission, to appraise their reaction to emergencies, their capacity to help make decisions, their judgments, responsibility and resourcefulness.

All of the techniques described thus far exemplify the "work-sample" or sociodramatic technique in an operational kind of leadership. In order to evaluate administrative leadership ability the same technique was applied in situations of an administrative nature, such as around the conference table. Two of these situations are described, the Discussion and the Debate.

Leaderless group situation - Discussion test:[13] The discussion test came to be known as the verbal counterpart of the Brook and Tail tests. Here the candidates were called on to show their leadership ability in a verbal situation. The candidates were grouped around a table and given a topic for discussion such as "What are the major post war problems facing the United States, and (if you have time), along what lines do you think they should be solved?" The group was told that each man should be allowed a chance to express his opinion and to arrive at some conclusions on which most of the persons in the group could agree. Then just before the end of the period (40 minutes) one member of the group came to the staff the conclusions of the group. During the discussion the staff observed from the other end of the room.

For this situation leadership was observed by noting the man who strove to guide the group toward a definite goal and by noting who was

13 Ibid., p. 129 ff.

the one selected to give the conclusions to the staff. The success of the speaker in organizing the material was also taken as a measure of administrative leadership. Usually in these situations it was observed that the good leader "commanded the respect of the other candidates by his convincing and confident discussion of the topic, and by skillful means he encouraged their participation and cooperation, making sure that each man had a chance to speak; he coordinated the various opinions of others and from time to time summarized them succinctly for approval by the group before moving on to new types"; gave his own ideas in such a way as to encourage others to more discussion; kept the group and himself oriented to the task at hand; watched the time; "and though capable of being both assertive and forceful in leading the group, he knew when to defer to the wishes of others and was not afraid to do so."[19]

<u>"Leaderless-group" situation - Debate test</u>:[20] The procedure used in the Debate was to divide the entire number of candidates into two groups and give them a question for discussion such as "What are we fighting for?" The groups were sent to separate rooms to prepare their arguments with a few staff members observing each group. It was suggested that each group select a chairman to organize the discussion as well as to present its position.

By observing the teams in preparation for the Debate the staff was enabled to rate leadership similarly as before in the Discussion

19 Ibid., p. 131

20 Ibid., p. 177 ff.

team. The debate team was a highly informal situation and hard liquor was served in hopes of encouraging the reluctant candidates to enter the discussion.

This situation, though similar to the discussion situation, was in some ways quite different. "The larger audience, the division of the group into two teams, the use of debating techniques with the speaker standing before the whole group, and perhaps most of all the liquor, made the debate qualitatively quite different from discussion".[21] Here a better opportunity was presented for organization and leadership on a large scale. Also, the debate came at the end of the second day, resulting in "greater freedom of social interaction", because the group had become acquainted with each other and their surroundings.

Debating Techniques - Instituted[22] The debating technique was not used until the third day of assessment, by which time the candidates had become well acquainted. The staff tried to induce the men to take the task of setting agendas seriously and to execute it with complete honesty and candor.

The procedure used was for each man to answer seven questions, two of which concerned leadership directly. In addition, each man wrote five pen sketches of the five people that he had come to know best. The representative questions of the type used are:

"How would you recommend an organization of a group dealing with problems of planning and organization?"

"If you were a member of a group on a dangerous mission,

21 Ibid., p. 179.

22 Ibid., p. 181 ff.

whom would you prefer to have as your leader?"

Each candidate could put down as many choices as he desired and he was told not to answer the question unless he could make an honest choice. The questionnaire was scored by the number of choices received.

Interviews[23] The interview at 3 came at the end of the third day, after all ratings for the candidates for the various situations were in. With these ratings before the interviewers, candidates were brought in one at a time. They were questioned, usually about points which were doubtful, as determined in the other situations. With the information obtained from the other tests and that obtained through questioning, the interviewers rated each man. In addition to ascertaining what each man could do at the present time, the staff through the interview was able to find out what he had done and his plans for the future. The interview thus played an important part in the whole assessment program.

Approach to evaluation of leadership by the OSS Assessment Staff.[24] The OSS Assessment Staff took as a definition of leadership "a person's ability to take the initiative in a social situation, to plan and organize action and in so doing to evoke cooperation." In addition, the staff originally thought of two types of leadership. This stemmed from the reasoning that a man who strongly asserted leadership would not always be able to maintain it and that conversely, a man placed in a leadership position even though he had little drive to assume that

23 Ibid., pp. 113 ff.

24 Ibid., p. 301

position might function efficiently when placed there by his colleagues. The distinction had to be dropped later in the program, insofar as the rating sheet was concerned, but it continued to play an important role in the staff's thinking.

Throughout the assessment program the staff tried to discover operational leadership that was truly effective. They tried not to be deceived by superficial qualities which at first may have looked like the real thing. Sometimes returns by the staff and by associates were in disagreement, since the associates seemed to consider appearance, manner, voice, age, and graying hair. This caused the staff to wonder to what extent these factors, viewed by the candidates as being essential to real leadership operations might not in reality be essential to it, "since leadership must always be in part determined by the stimulus value of the leader."[25] Right or wrong the staff rated the conduct, rather than appearance, that was shown when active leadership was most needed.

One question in the minds of the staff was the consistency of leadership. "Is a man's leadership very much the same regardless of the situation in which he is called upon to exert it? Is it reasonable to expect that a man of superior administrative leadership ability will prove himself equally superior when his leadership is tested in the field? Can the leadership which a man demonstrates in a group discussion of world affairs be taken as a measure of his ability to lead men

25 Ibid., p. 382.

on operational missions?"[26] The inability of the staff to answer these questions led to the introduction of a battery of situational tests, and in the interview to seek some indication of the candidate's leadership in the past and also of the consistency and generality with which he had demonstrated this ability.

During the assessment program, it was observed that leadership in one field situation correlated as highly with the ratings of leadership given by Discussion and Debate as it did with the rating in another field test. "Such a finding suggests that, as against the other variables rated at 5, Leadership is a relatively general trait."[27] The staff noted however, that two alternative interpretations could not be ignored: "(1) That the various situational tests, despite obvious differences, were sufficiently alike to elicit approximately the same behavior from each subject; and (2) that in rating leadership in the various situations the members of the staff were unduly influenced by an over-all halo effect for each subject."[28]

Appraisal of techniques by the staff: The staff considered the Leaderless-Group, Discussion and Debate test to be reasonably satisfactory "leaderless-group" situations. They were thought to reveal those who had social initiative, some measure of need to govern others, the quality of leadership of those who wanted to assert it and the reactions of others to such leaders. One disadvantage noted was that they offered

26 Ibid., p. 302

27 Ibid., p. 303

28 Ibid., p. 303

an opportunity to estimate the leadership potentialities of all members of the group.

In the ratings by associates the staff noted that the candidates were influenced by their observations of each other in the situational tests, and in particular by the Debate which occurred the night before the ratings and by the running of an obstacle course which occurred just prior to the ratings. A test was made to determine the correlation of nominations by peers for administrative leadership and operational leadership in a sample of one hundred cases. This showed a correlation coefficient of .71 indicating that a large number of candidates believed that a man with administrative leadership also possessed operational leadership. Of all the techniques employed by the assessment staff the rating given by the interviewer correlated most highly with the final rating (.79). It is pointed out that this does not mean that the Interview alone contributed most to the final rating of leadership, for the interviewers had observed the candidates in the various situations and informally prior to this time, so it may have been merely a summation.

An analysis was made to find out what were the characteristics of candidates who were rated high in leadership at the Brook. "The study revealed that of the twenty-five men who had received superior ratings of leadership, only one had received a rating of Intelligence less than high average in the same situation. Four times out of five, personality sketches drawn up by the staff, of those candidates who had been rated superior in leadership emphasized energy, zest, effort, or

initiative, and never once mentioned a lack of these. On the other hand, the sketches of the twenty-five men who had received the lowest ratings in leadership contained no reference to these traits. It is clear from these reports that the man who was considered a good leader in the Brook situation almost without exception possessed at least average intelligence, average physical initiative, more than average social initiative, and social relations characterized by tact and good will sufficient not only to avoid friction over differences of opinion but also adequate to enlist in a positive way the efforts of the less enthusiastic members of a team.

A wider scanning of the personality sketches of candidates who had either received high or low ratings on leadership revealed a number of characteristically associated traits.[29] For superior leaders the traits frequently mentioned were confidence, common sense, originality, assertiveness, cheerfulness, tact, persistence, and a desire to excel. In the sketches of inferiors the traits frequently mentioned were readiness for anger, conceit, introversion, selfishness, depressive mode, confusion, indecision, excitability, and impulsiveness.

The validation of assessment techniques by the staff:[30] Towards the end of the war a follow-up study was attempted to see how successful the assessment program had been. This was done by trying to get

29 Ibid., p. 306.

30 Ibid., pp. 446-482.

an accurate evaluation of actual performance in the combat situation. Four procedures were used, namely, appraisal by staff members sent to individual duty stations to evaluate individual success, appraisal by theater commanders, appraisal by interviewing individuals in the reassignment area, and by associates' appraisal.

As far as is shown by the validation study, the success of the program remains unknown.[1] Results obtained in the field do not show any appreciable relation to those obtained at Station S. That is, persons rated high in leadership at S were not necessarily rated high in the real situations in which they were later placed. Since this is the case, it is not known whether the techniques used at S were no good or the validation study was improperly conducted. The staff prefers to believe that the latter is a better explanation of the results obtained than the former. The collection of further data to verify the results was cut short by the end of the war.

It appears that better results would have been obtained if the situational approach had been used in the validation of the techniques used. Men in OSS held all kinds of positions from office work to agents in enemy countries. It does not seem likely that the assessment techniques would predict success equally well in so many varied situations. Unfortunately one of the best means of validation was neglected, that is, all men who failed in assessment were taken out

[1] Ibid., p. 392.

of the program. If some of these men had been sent to the field perhaps a rough measure of the value of the techniques would have been found.

Whether the procedures used by OSS are useful in evaluating leadership potentialities are unknown. They do suggest ideas, however, as to how similar procedures may be used in a [redacted] unit. These applications are discussed later.

Studies of Military Leadership by the Armed Forces

The following studies made by the various branches of the Armed Forces prior to and during the recent war illustrate the basic techniques of developing leadership criteria that they used. In some cases the criteria were developed as predictive instruments and in others as validating instruments. Results obtained are given where available.

Study at the Medical Field Research Laboratory, Fort Bragg, North Carolina: This is a study of the methods used in selecting Marine Corps officers in their officer candidate schools. The main purpose of the study was to develop objective methods of predicting success or failure in these schools. It was reported upon during the Maryland Conference on Military Psychology.[31]

Several methods were used, one of which was similar to the nominative technique. The procedure involved the use of a form called the Personal Preference Questionnaire. Each candidate was asked to give his opinion regarding his associates with respect to such things as desirability as a roommate, sense of humor, leadership in emergencies,

31 Kelly, G.A., New Methods in Applied Psychology, University of Maryland, College Park, Maryland, 1947, pp. 90-99.

fairness in hearing court cases, and all around officer material. Candidates indicated their first five choices and their last choice within the group. The groups were composed of about fifty men and the questionnaire was administered after five weeks of acquaintance.

After a method of scoring the items had been devised it was found out that not all of them predicted the officer-candidate school pass-fail criterion equally well. "Desirability as a roommate" was correlated positively only slightly (.19) but the all around officer rating was correlated with it to the extent of about .40 (biserial). An interesting point in this nominating technique, or "buddy rating" as it is often called, is the fact that such ratings are not related to intelligence as measured by the GCT (Army) or to mechanical aptitude as measured by the MKT (Army). Just what they do measure is not known, but the evidence in this study indicates they are more closely associated with grades on military characteristics (.46), including leadership, than with grades in school courses (.15).

A follow-up study was made in which the results obtained by the nominating technique as well as others, were compared with what was taken as a criterion of combat efficiency for the purposes of this study. One hundred officers whose success had been predicted at the Officer Candidate School were rated on a combat proficiency rating scale by their battalion commanders after they had been in the combat situation. The results of the follow-up study are reported

by S. B. Williams and H. J. Leavitt.[32]

The results obtained, say the authors, indicate a substantial relationship (tetrachoric r = .42) between the battalion commander's report of combat proficiency of these officers and the "buddy ratings" previously described. It is also noted that success in O.C.S. as measured by various paper-pencil psychological tests and O.C.S. grades were not related to the combat proficiency reports. J. W. Eaton, in an article on military leadership experiments, says it is the conclusion of those who conducted this follow-up study that "the evidence thus far presented points strongly to the conclusion that the men themselves are more capable of picking their own leaders than are their instructors and training officers."[33]

Study by the Aviation Psychology Branch, Bureau of Medicine and Surgery: Also reported at the Maryland Conference on Military Psychology was another study involving the nominating technique. The purpose of this study was to find criterion groups upon which to validate certain selection instruments, given below.[34]

A group of Naval aircraft pilots in a combat area were chosen as subjects because they were believed to be suitable for such a study. After experimental study, a field procedure was tried out in which each combatant pilot was asked to name four men known to him personally

32 Williams, S.B. and Leavitt, H.J. Group Opinion as a Predictor of Military Leadership. Journal Consulting Psychology, 1947, 11, pp. 283-291.

33 Eaton, J.W. Experiments in Testing for Leadership. American Journal of Sociology, 53, 1946-47, pp. 523-35.

34 Kelly, G.A. Op. Cit. pp. 22-26.

"Two of whom he would be pleased to fly wing on in combat, and

Two of whom he would not want flying wing on him."

In addition, each pilot was asked to state his reasons for each choice made. Pilots were told to choose from among all the pilots they had ever known whether living or dead. After further experimentation the finally accepted procedure was the same as this except a realistic problem was set up and a check list was provided for checking desirable and undesirable qualities. Only three qualities were checked for each nominee. In all, twenty-five hundred interviews were held giving about ten thousand nominations, and the names of about forty-five hundred different pilots. Persons who were chosen for the first category above were placed in a high group and those chosen for the second category were placed in a low group. Of all the nominations received only five percent were chosen for both the high and low categories and less than two percent were chosen two or more times for both of the categories.

The results of this study are reported by Kelly as follows:

1. Scores of the mechanical comprehension and Wonderlic Personality Test appear to show a slight positive relationship to both categories of the criterion.

2. There is a slight positive relationship between certain grades in pre-flight school and combat nomination.

3. Attempts to find the relationship of the validating criterion used to planes shot down, accuracy of bombing, awards, and grades on fitness reports were fruitless. This was caused by the spotty records that combat units kept and the inaccessibility of records in many cases.

4. Of a group of seventy men officially recommended for removal from pilot status more than ninety-five percent were from those who had been chosen for the low category.

Study by the Personnel Research Section Classification and Assignment Branch, Adjutant General's Office: The Army has made numerous studies of its officer selection procedures but few of them have been published or still are labeled restricted. Two of their studies are reported here.

The first of these had as its objective the validation of a group of five selection instruments.[35] Again as in previous studies described the nominating technique was used to develop the criterion. Approximately thirteen thousand officers at about fifty Army installations participated. Officers were brought together in small groups of fifteen to thirty who were well enough acquainted to evaluate each other. From among the group there present each officer placed every other officer in a High or Low group. Listings were from highest to lowest, next highest to next lowest, etc. In addition to this each officer designated five officers most closely in the middle of the group with respect to overall value. Only clear cut cases of High, Middle, and Low were used in the final sample.

The evaluation of this technique is still unknown. The correlation coefficients, using it as the validating criterion for three of the selection instruments are as follows: Officer Evaluation Report .60 (involves forced choice technique rating scale), Interview Board

35 Kelley, G. A., Op. Cit., pp.77-85.

.37, Biographical Information Blank .35, Combined Point Index .67, and traditional Army Board .09. The general conclusion drawn from this study is that the Combined Point Index will tend to select officers satisfactorily on the basis of past and present performance.[36]

In an article in the Psychological Bulletin, William O. Jenkins has some objections to the technique here employed.[37] He thinks that commanding officer's ratings played too important a role, since where an individual was placed more than one group away from that given by the commanding officer of the group, his name was discarded. In defense of the technique used in developing the criterion for this study, Donald E. Baier says that Jenkins' objection on this point is incorrect.[38] Only on a few occasions says Baier, was there any difference between the commanding officer's ratings and those of the rest of the group. He also states that he believes the criterion employed represents progress in the development of leadership criteria. This

36 The results obtained from the Biographical Information Blank and the Interview were combined with the OER by statistical weighting procedures to secure the Combined Point Index.

37 Jenkins, W.O. A Review of Leadership Studies with Particular Reference to Military Problems. Psychological Bulletin, 1947, 44, pp. 54-79.

38 Baier, D.E. Note on "A Review of Leadership Studies with Particular Reference to Military Problems". Psych. Bull. 1947, 44, pp. 515-516.

study has also been reviewed by Joseph W. Eaton and he considers the method of setting up the criterion to be a good example of how a criterion should be set up. However, he too says it has its shortcomings.[39]

A second study worthy of mention here was one made by the Adjutant General's office of West Point Graduates after eighteen months of duty as Army officers.[40] Prior to graduation the nominating technique was used which involved inter-cadet ratings for leader nominations. The study revealed a significant association (r = .51) for infantry officers, between the inter-cadet ratings and success as an officer measured by the officer efficiency report WD, AGO Form 67. The author does not state how many persons were included in this study.

Study by the Applied Psychology Panel of the National Defense Research Committee.[41] This study was made for the validation of company ratings in Army Officer Candidate Schools and General Classification Test scores. The ratings were made by school superiors only. The validating criterion involved the rating of 176 men on combat duty by their superior officers. Jenkins says that the ratings indicated that the rating officers were taking into account the actual performance and were not rating simply on general impressions. The spread in the ratings that were obtained he gives as 13 percent superior, 19 percent excellent, 33 percent very satisfactory, 10 percent satisfactory, and

39 Eaton, J. W. Op. Cit. pp. 523-35.

40 Baier, D. E. Op. Cit. pp. 325-326

41 Jenkins, W. O., Op. Cit. pp. 54-79.

5 percent unsatisfactory. The conclusions drawn from this study are as follows:

1. Combat efficiency is not very closely related to superiors ratings of leadership obtained in O.C.S. The correlation between the two sets of ratings was .15.
2. It is reasonably clear that above a certain desirable minimum, intelligence as measured by Army G.C.T., has little relevance to combat performance.

This study is also reported by C. W. Bray.[42]

Study by the Aviation Psychology Branch, Bureau of Medicine and Surgery, Army Air Forces: The objectives of this study were to get improved devices for selecting potential leaders for the Air Forces and more systematic information concerning the nature of successful leadership.[43] Three major investigations were undertaken.

The first investigation dealt with the collection of descriptive information which served to reveal the types of behavior exhibited in the combat situation by individuals who were designated leaders or who assumed leadership responsibilities. This information was gathered from superiors, associates, and inferiors who were or had been in a combat area. The procedure used was to have these persons give anecdotes illustrating acts of good or bad leadership or listing

42 Bray, C.W. Psychology and Military Proficiency: A History of the Applied Psychology Panel of the National Defense Research Committee. Princeton, N. J., Princeton University Press, 1948, pp. 66-77.

43 Viteles, M. Psychological Research on Problems of Redistribution. Report No. 14, Army Air Forces Aviation Psychology Program Research Reports, U. S. Gov't Printing Office, Washington, D. C., 1947, pp. 3-8.

characteristics that they thought necessary for combat leaders to have. About ten thousand pilots took part in this investigation. From the mass of data collected a rating scale was constructed involving the forced-choice technique. This technique requires a rater to make a choice between a number of characteristics, usually two, both of which appear to be equally good or bad. The value of this rating scale has not yet been demonstrated.

The second investigation dealt with the relationship between promotions in combat and responses to a General Information Test and a Biographical Data Blank. The only generalizations drawn from this investigation were that persons who perform well on fine arts items seemed to be men who were promoted more frequently in combat; while those who did well on sports items seemed in general to be those who were promoted less often overseas.

In a third investigation an effort was made to validate aircrew-candidate test against such objective criteria as missions flown, promotions, aircraft destroyed, decorations, flying accidents and position flown. The results of this investigation, as given by the author are as follows:

> "The analyses indicate that for navigators no relationships exist in the data between test scores and criteria. For bombardiers, negative relationships tend to be found between test scores on the one hand and promotions overseas and position flown on the other.
>
> For first pilots, negative relationships predominate for most of the criteria, missions flown being an exception. For copilots, consistent positive relationships were found with

promotions overseas and decorations.

With fighter pilots, consistent positive relationships were found with accidents in combat, and consistent negative relationships with decorations.

In general, negative correlations tend to occur between the test scores and promotions overseas, decorations, and position flown." [44]

Summary

The studies presented here are not considered as covering all of the work done on the subject of military leadership. In many cases in the available literature studies are mentioned without reference as to where reports can be found or if a reference is given it frequently was found to be in a restricted classification. Often reports of studies were limited to a brief treatment giving little information of procedures used or results obtained. The report made by the OSS is by far the most complete treatment of methods of leadership evaluation and for which reason it is given more comprehensive treatment in this survey.

44 Ibid., p. 91

CHAPTER IV

DEVELOPMENT, ADMINISTRATION AND SCORING OF THE CRITERION MEASURES

In this study three criteria were applied as measures of leadership. These include nominations by associates, ratings by superiors and the Sanford-Hemphill paper-pencil situations test.[1] The ratings by superiors are those official ratings made by officer-instructors in the NROTC unit and by officers on two annual midshipman cruises. The exact basis upon which these ratings were made is unknown, but it may be assumed that they are primarily based upon academic achievement. The nominations by associates were obtained through the use of nomination questionnaire forms, developed for use in this particular study.[2] The development, administration, and scoring of the nominations questionnaires and the situations test are described below.

Nominations Questionnaires

Development: There were two nominations questionnaires used, one being given about five weeks after the first.

The first of these consisted of three situations which were designed to elicit choices for good and poor combat leaders, good and poor administrative leaders and for a possible third type of leader which in this study is called a politician type. An effort was made to make the situations as realistic as possible and to get each member of the group to imagine himself in the actual situation.

The idea for separating the types of leadership into combat and administrative was conceived from the Office of Strategic Services

1 See Appendix I for a copy of this test. It is used in this study by permission of the authors.

2 See Appendix I for copies of questionnaires used.

study and the addition of the politican type of leadership was a suggestion by members of the Personnel Research Board of The Ohio State University, who are engaged in the Naval Leadership Studies.[3] The purpose for this seperation of leadership is to find out whether or not individuals do distinguish the three types and if so whether instructors ratings in this particular NROTC unit are more closely related to one type than another.

In addition to the three situations, a roster of persons in the group was attached to the questionnaire so that members of the group not known by any individual could be deleted. The purpose of doing this was to determine a "knowingness" score for each individual.

The second questionnaire had the same three situations as the first and, in addition, a fourth situation, in which individuals were to make favorable and unfavorable choices for friends from among the group. This questionnaire was given to find the reliability, that is, the consistency of nominations made, and to find the relationship between choices made for the three types of leaders and choices for friends.[4] "Do individuals tend to pick as leaders in the various situations the same persons that they pick to be their friends?" is a question that needs to be answered when using the nominations technique.

In one study the conclusion is that individuals do distinguish

3 Dr. J. K. Hemphill and Dr. D. T. Campbell

4 The reliability found may be lower than the real reliability because of a change in the relationships of individuals due to a lapse of time.

somewhat between choices for leaders and choices for friends in situations where the individual or the group will be benefited.[5]

Besides the four situations on the second questionnaire each individual was asked if his choices in each situation would have been the same if the ratings obtained were to be used for administrative purposes. This was added in an effort to get some indication of the group's reaction to associates rating.

Administration: The nomination questionnaires were given to the Junior Class of midshipmen. This group had been together (both at the University and on two annual midshipman's cruises) for a period of about three years. The number in the group used for this study is forty-eight. Questionnaires were filled out during class periods.

Before the forms were passed out to the group, the instructions on the forms were read and, in addition, elaboration was given on several points. This included pointing out that the questionnaires were to be filled out anonymously, that results would be kept secret and that the success of the study depended on each individual choosing the persons he honestly would select for each situation. It was also pointed out to the group that some or all of the same names might be used if desired, in all of the three situations, however, they were to keep each particular situation clearly in mind while making the

5 Jennings, H.J. Sociometry of Leadership, Sociometry Monographs, No. 14, Sociometric Institute, Beacon House, 1947, p. 6.

choices.

The instructions for administering the second questionnaire were identical to the first except the new situation and question were pointed out to the group.

The time required for completing the forms in each case did not exceed fifteen minutes.

Scoring: The general method of scoring used for the two questionnaires was first to tally up the favorable and unfavorable choices each individual received for each situation. The unfavorable choices were then subtracted from the favorable. All choices were given equal weighting, that is, an individual received the same credit regardless of whether he was first, second, or third choice. In some cases, however, scores were obtained by considering only the first choice. When this is the method used it will be pointed out.

The "knowingness factor", that is the number of times an individual was deleted from the roster, was not taken into account in the scoring, inasmuch as there were so few persons unknown to the group. The different types of scores obtained and their meaning are given below.

1. Overall score - The total favorable choices received in the combat, administrative and political situations minus the total unfavorable choices.
2. Combat score - The total favorable choices received in the combat situation minus the total unfavorable choices.

3. Administrative score - The total favorable choices received in the administrative situation minus the unfavorable choices.
4. Politician score - The total favorable choices received in the politician situation minus the unfavorable choices.
5. Friend score - The total favorable choices received in the friend situation minus the unfavorable choices.

Naval Council Situations Test

Development: The situations test is composed of twenty-one Navy-like leadership situations. These are similar to the following:

"You are a unit commander. One of the best men in your unit enters your office requesting a transfer. He appears very disturbed and will offer no adequate reason for his request. You are very busy at the moment and do not have time for a long discussion. Consider the following courses of action:

1. Promise to recommend his transfer at the earliest moment.
2. Send him to the Medical Department to see a psychiatrist.
3. Set a definite time for him to see you when you can discuss the matter fully.
4. Ask him to prepare and submit a letter stating his reasons for requesting transfer.
5. Refuse his request pointing out that he has no reasons for such a request."

Individuals taking the test consider each solution and indicate whether he believes it to be: (1) definitely desirable, (2) probably

desirable, (3) doubtful, (4) probably not desirable, (5) definitely not desirable.

Although there are no "right" answers it is believed by the authors to give some indication of the quality and certainty of reactions of individuals to life-like situations. The authors[6] constructed the situations and solutions so that they fall meaningfully into five classes:

"1. Answers indicating a definite action based on a consideration of the complex human factors in the situation.

2. Answers indicating a passive easy action.

3. Answers indicating an ego-defensive action, where protection of one's feeling is more important than getting the job done.

4. Answers indicating arbitrary, dictatorial, 'hard-boiled' action, action where sheer authority is used to solve the problem.

5. Do-Nothing answers. Answers indicating an unwillingness to take action or a failure to appreciate the problem."[7]

Administration: The instructions given at the beginning of the test were read to the midshipmen before being passed out. Emphasis was placed on the fact that individual scores attained would be kept confidential.

The time required to complete this test did not exceed forty-five minutes.

6 Sanford, F.H. and Memphill, J.K. An Evaluation of the Test "Psychology for Naval Leaders" Used in Leadership Training at the Naval Academy. University of Maryland, College Park, Maryland, 1946, p. 7.

7 Ibid., P. 16.

Scoring: The scores obtained on this test were arrived at in three ways. In the first method, a key was provided by the authors which grouped all solutions into the five classes previously described, that is, considerate, authoritarian, passive, ego-defensive, and do-nothing. Scores for each of these classes were then computed for each individual. How this was done can best be explained by an example.

In the considerate class of solutions, if an individual thought the solution was definitely desirable, he had placed the number one on the special answer blank. If he thought the solution was definitely not desirable, he had placed the number five on the blank. Similarly he may have placed the numbers two, three, or four on the blank depending on his reaction to the solution given. To get an individual's score it was only necessary to add up the numbers recorded on the blank for each class of solutions. Low scores were considered as being good in the considerate class of solutions and high scores good in the other four.

In addition to these five scores for each individual a sixth was obtained simply by adding up the number of ones and fives on the special answer blank for all of the solutions. This score is called a confidence score.

Two other scores were obtained in a similar manner as in the first method. In this case, however, only two classes of solutions were considered; those believed to show considerateness of subordinates and those believed to show considerateness of superiors. This method

of course necessitated the elimination of some items of the test.

In the following chapter the interrelationship of the scores obtained by the nomination questionnaire, the paper-pencil situations test, and superior ratings are presented and interpreted.

CHAPTER V

INTERRELATIONSHIP OF THE CRITERIA

Statistical Procedures

As was stated in an earlier chapter, it was hoped that through a study of the interrelationships of the criterion measures that the use of one of them might throw some light on the other. Several important questions may be answered by such a study. These include whether superiors tend to rate the same persons good as nominated good by associates, whether persons scoring good on the paper-pencil situations test tend also to be good on superiors ratings or associates nominations or both, whether persons distinguished between the types of leaders, whether they seem to be influenced in their choices of leaders by their desired friends, and others. In addition, the reliability of the instruments can be ascertained by studying the interrelationship of the choices or ratings made on two separate occasions. To find the answer to these questions and others and the degree of association, if any, it was necessary to use some relatively simple statistical procedures. These consisted chiefly of working out the correlation coefficients between each of the variables. In addition, scatter diagrams were used as a rough indication as to what the correlation coefficients might be. The technique of correlation used in this study, the interpretation of correlation coefficients and the interpretation of scatter diagrams are discussed below.

Technique of correlation: The standard method of determining the extent to which two variables are related in this field is to determine the correlation coefficient. This coefficient can be computed

in several ways. It is not within the scope of this thesis to discuss each of these ways and therefore only the method used in this study will be discussed. For further information on the technique of correlation the reader is referred to any number of standard text books.[1]

The "product-moment" correlation coefficient was used throughout this study. To find this type of coefficient the following formula was used:

$$r_{XY} = \frac{N\Sigma XY - \Sigma X \Sigma Y}{\sqrt{N\Sigma X^2 - (\Sigma X)^2}\sqrt{N\Sigma Y^2 - (\Sigma Y)^2}}$$

N in the formula refers to the number of persons on which scores were obtained. To find the other quantities to substitute in the formula gross scores (scores in original form) for two variables were recorded in two columns. The first column was labeled X, and the second Y. For example, all the combat scores obtained for each individual were listed in the X column and all the corresponding administrative scores for each individual were listed in the Y column. When these columns were summed the quantities ΣX (Σ stands for summation) and ΣY in the numerator were found. By squaring these quantities, $(\Sigma X)^2$ and $(\Sigma Y)^2$, under the radicals in the denominator were found. To find the term ΣX^2 each of the gross scores in the X column were squared and then summed. Similarly the term ΣY^2 was found. By multiplying each gross score in the X column by the corresponding gross

1 Edwards, A.L., Statistical Analysis, Rinehart & Co., Inc., New York, 1946, pp. 79-105

score in the $\bar{X}$ column and then summing, the term ΣX was found. After all these terms were computed and substituted in the formula, the correlation coefficient (r_{XY}) for any two variables was found by solving the formula by means of a calculating machine.

Interpretation of correlation coefficients: Correlation coefficients can range from a plus one, through zero, to a minus one. If it is a plus one it indicates a perfect relationship between two variables; if zero, complete independence; and, if minus one a perfect negative relationship. In the table below a descriptive evaluation of the degree of association indicated by any coefficient is given.[2]

r	Degree of relationship
.90 - 1.00	very high
.78 - .89	high
.64 - .77	moderate
.46 - .63	low
.00 - .45	very low

From the table it can be seen that an r of twice the magnitude of another r does not indicate that twice the degree of relationship exist. For example, an r of .80 does not indicate twice the relationship that an r of .40 does.

If it is desired to determine the significance of a correlation coefficient it can be found by reference to tables provided for this purpose.[3] Significance as used here refers to whether the degree of

2 Ibid., p. 100

3 Ibid., p. 331

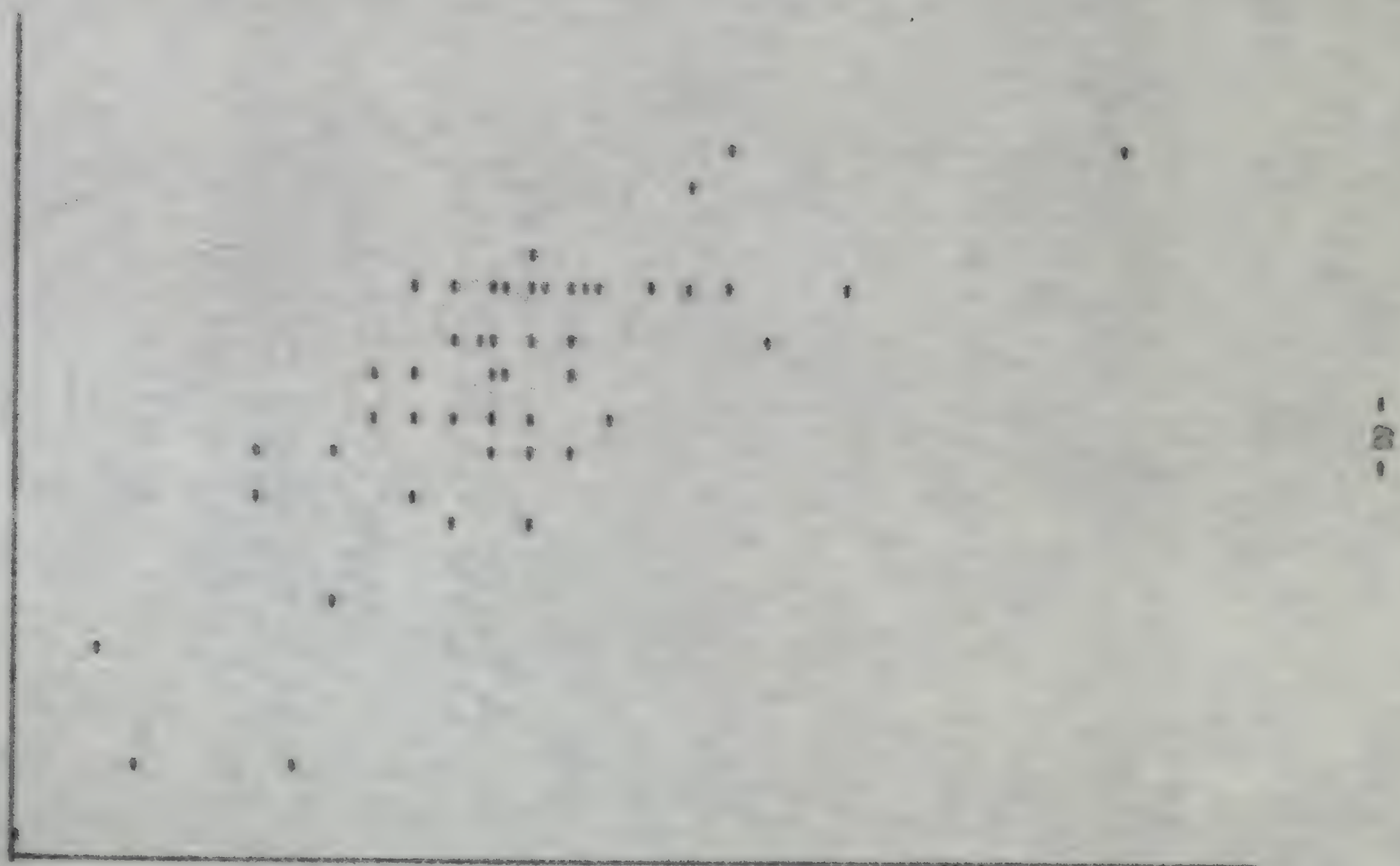
association between two variables is real, that is, is not purely a matter of a chance relationship.

For additional information on the interpretation of correlation coefficients the reader is again referred to any standard statistical text book.

Interpretation of scatter diagrams: If it is desired to get a rough indication of the degree of association between any two variables this can be done by means of a scatter diagram such as that presented on the following page. These diagrams are made simply by plotting on a graph the score made on one test by an individual against the score made on another test by the same individual. When this is done for all the individuals taking the two tests the result may be some such pattern of tally marks as in the diagram shown. By interpretation of the pattern that the tally marks form, a rough indication of the correlation coefficient can be ascertained.

It is intended only to give here the necessary information for interpretation of the patterns found in this study. Complete instructions on how to interpret scatter diagrams may be found by reference to standard statistical text books.

When the tally marks appear to lie along a straight line, such as in the diagram shown, there appears to be some relationship between scores made on one test by an individual and scores made on a second test by an individual. In the diagram shown the tally marks tend to fall along a straight line drawn from the lower left hand corner of the diagram to the upper right hand corner. If these tally marks did



1. Scatter Diagram Indicating Relationship of Contributions for a Contact Leader and a Friend

not tend to fall along a straight or a curved line, that is, they formed no definite pattern, then it could be concluded there was no relationship between the test scores. In addition, if the tally marks tended to fall along a horizontal line, that is, one of zero slope, then there would also be no relationship. If there is any relationship between test scores on any two variables it can be seen by the tendency of the tally marks to fall along a straight line (providing this line is not vertical or horizontal, that is, has zero slope) or a curved line. The magnitude of the correlation coefficient is indicated by the slope of the line and is greatest when the tally marks fall very near to a line making a forty-five degree angle with the horizontal or base line of the diagram.

Scatter diagrams are used in this study to show cases in which there was more or little relationship between any two measures used.

The results of this study on the interrelationships of the criterion measures are presented in terms of correlation coefficients in the following tables and scatter diagrams. After the tables and diagrams interpretations of the findings are given.

Table A

Interrelationships of choices made for Combat, Administrative, and Politician Types of leaders on Nominations Questionnaire Form One.

N = 48

Conditions	Combat and Administrative	Combat and Politician	Administrative and Politician
Favorable	.63	.73	.75
Unfavorable	.70	.79	.57
1st Choice favorable	.[illegible]	.[illegible]	.77
1st Choice unfavorable	.44	.83	.67
1st Choice favorable minus unfavorable	.57	.67	.51

The conditions column of this table refers to the methods by which the scores were obtained for getting each correlation coefficient. For example, in getting the correlation between choices made by the group for a combat leader and an administrative leader only favorable choices (those for the best combat and administrative leaders) were used in deriving the scores. Similarly, other correlations were computed by deriving scores based only on the first favorable or unfavorable choices or by subtracting the two. The N at the upper right hand corner of the table refers to the number of people in the group.

Table B

Interrelationships of scores on Nominations Questionnaire Forms and Superiors Ratings

*Scores	Instructors Ratings	Cruise Ratings 1947	N = 40-48 Cruise Ratings 1948
Overall 1	.34	.12	.04
Combat 1	.34		.04
Administrative 1	.34		.04
Politician 1	.43		- .04
Combat 2	.25		
Administrative 2	- .04		
Politician 2	.15		
Instructors Ratings		.15	.21

* The method of determining the scores in this column is explained in the preceding chapter. The figures 1 and 2 after the type of score refers to the questionnaire form from which the scores were obtained.

Table C

Interrelationships of scores from Nominations Questionnaire Form Two and Instructors Ratings

N = 48

	Friend
Combat	.55
Administrative	.35
Politician	.21
Instructors Rating	.36

Table D

Interrelationships of overall scores on the Nominations Questionnaire Forms, Class Standing, and Instructors Ratings

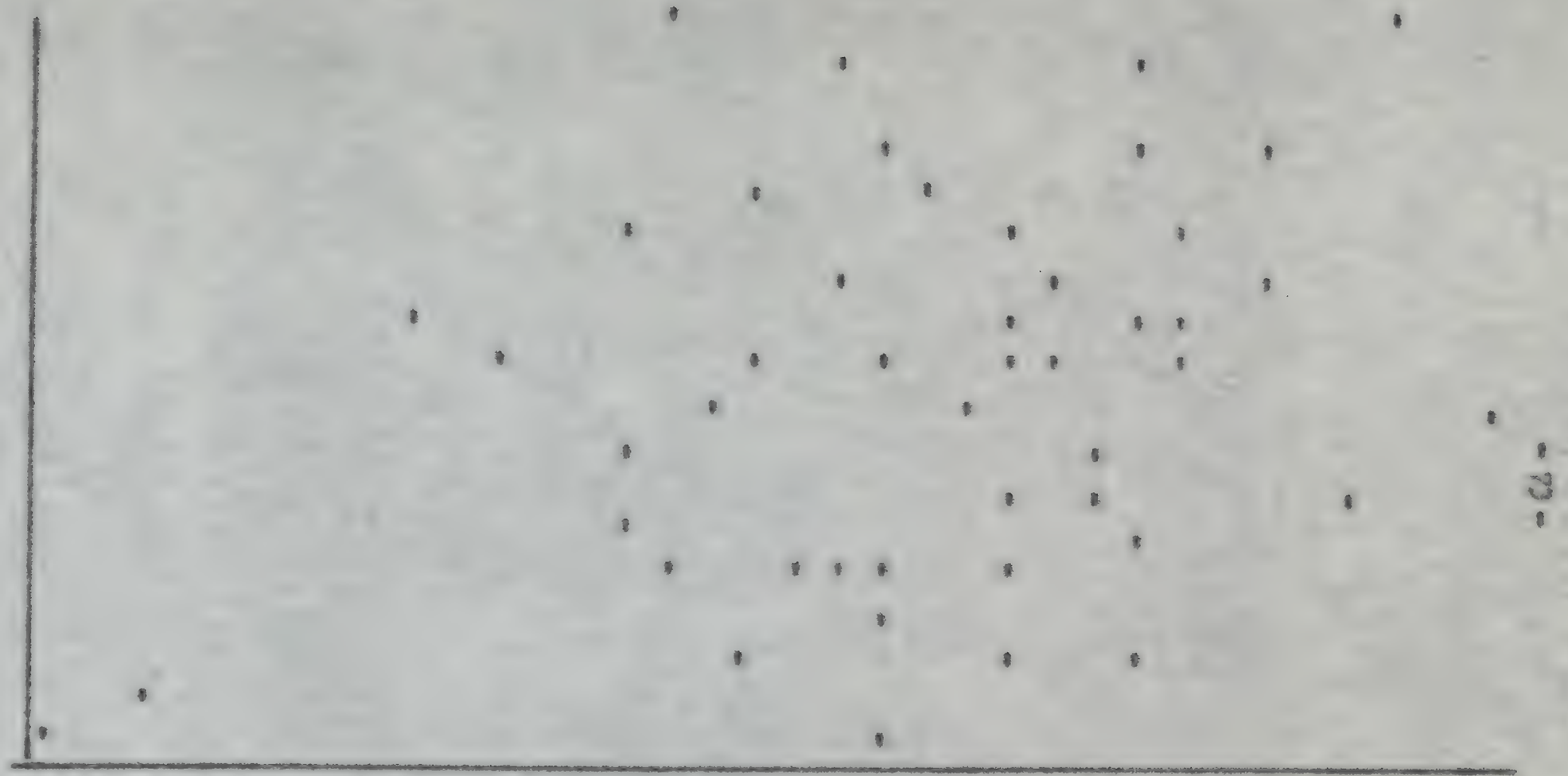
N = 48

	Overall two	**Class Standing
Overall 1	* .92 .90	.40
Instructors Ratings		.65

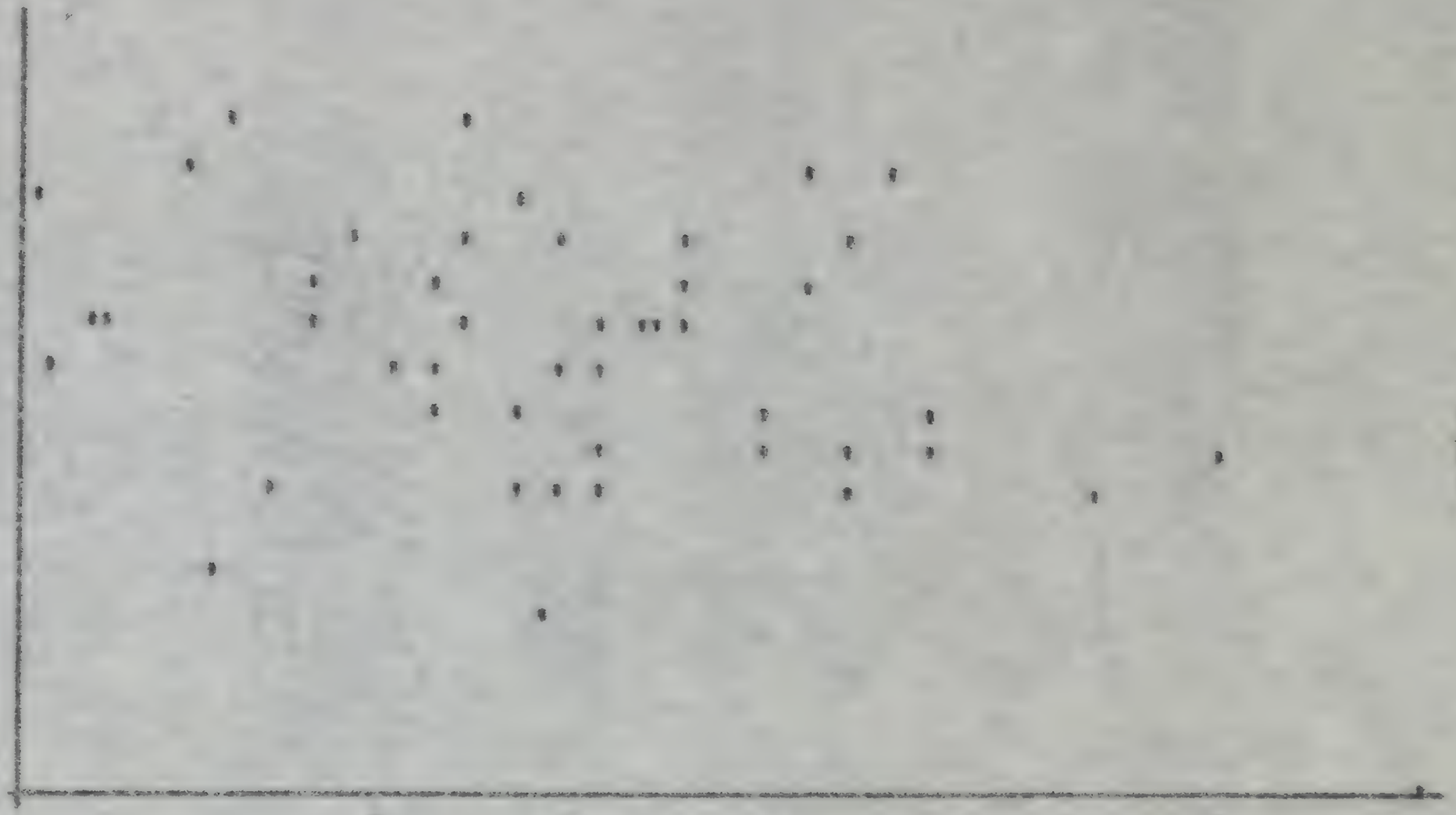
* The top coefficient was obtained by using favorable choices for the three types of leaders whereas the bottom coefficient was obtained by using favorable choices minus unfavorable choices.

** Class standing refers to the standing of each individual in the group as of June 1943. This standing was computed from the formula, $4N + 4G + A$, where N equals the naval science grade, G equals the grade in university academic subjects and A equals the "aptitude for the service" grade. These grades are averaged at the end of each academic year ending in June and substituted in the formula to obtain a score which determines class standing.

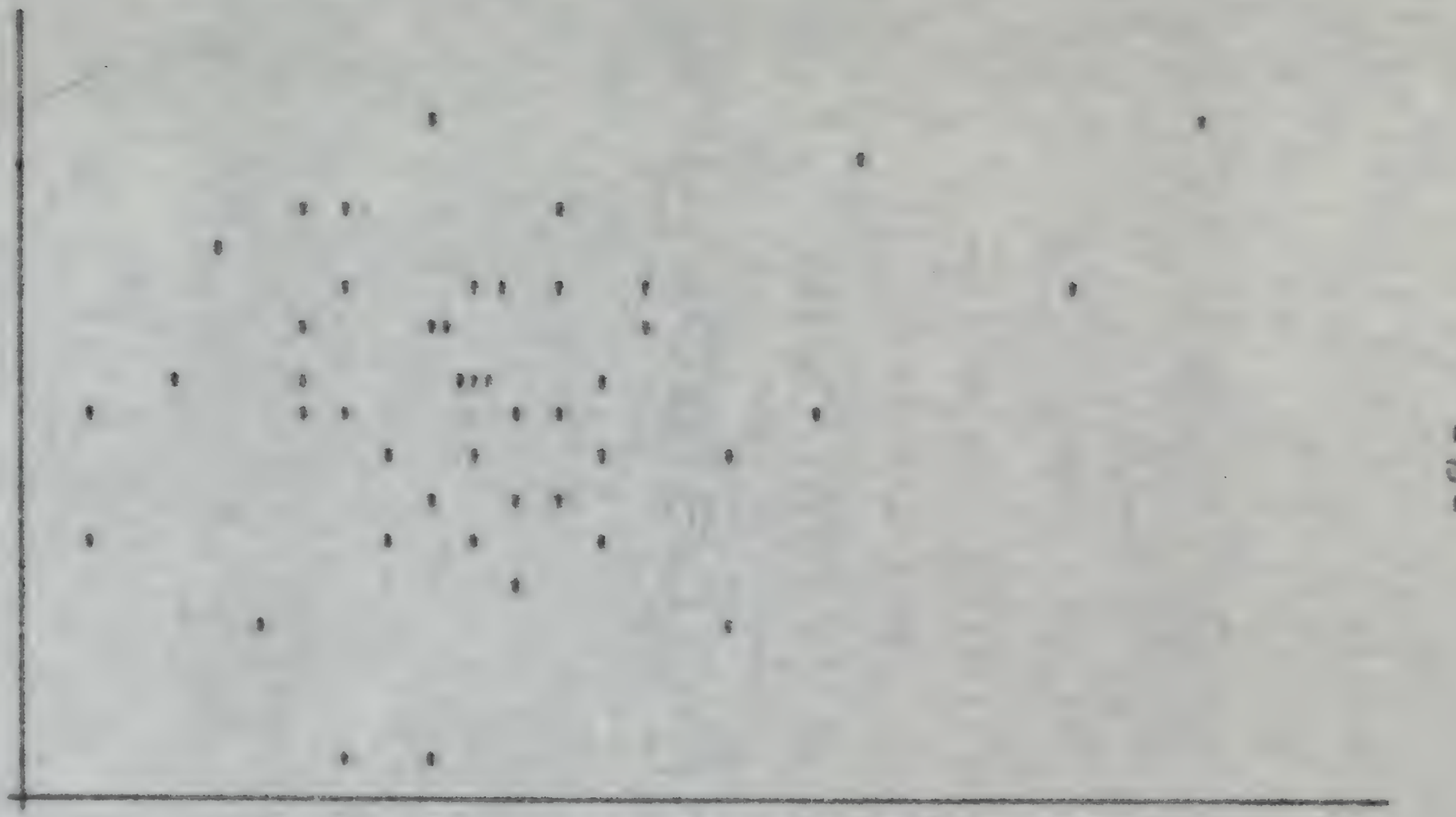
The degree of relationships between scores on the paper-and-pencil situations test, scores on the nominations questionnaires, and superiors ratings are indicated by the scatter diagrams on the following pages. There were no scores highly enough related to warrant the computation of correlation coefficients.



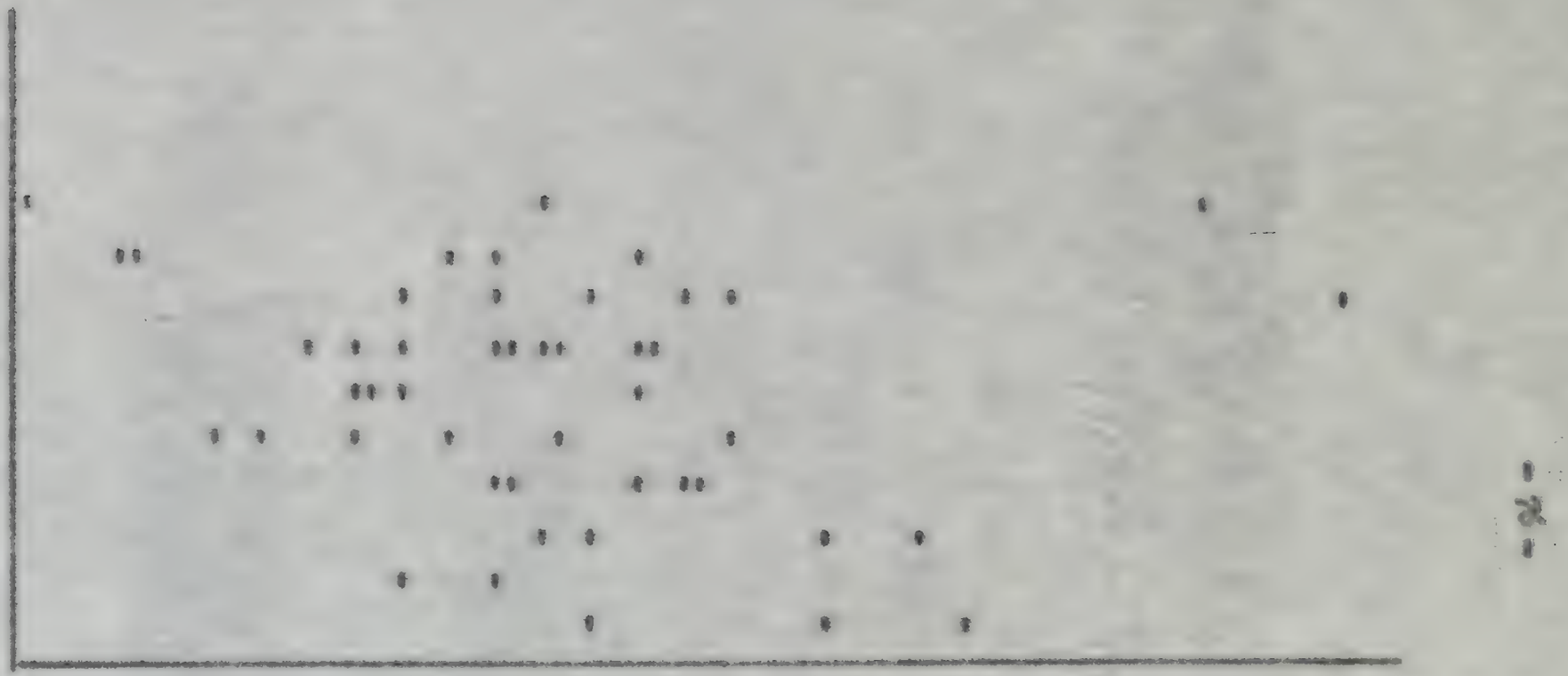
2. Scatter Diagram Showing Relationship Between Scores on Considerate and Authoritarian Items on the Paper-Pencil Situations Test



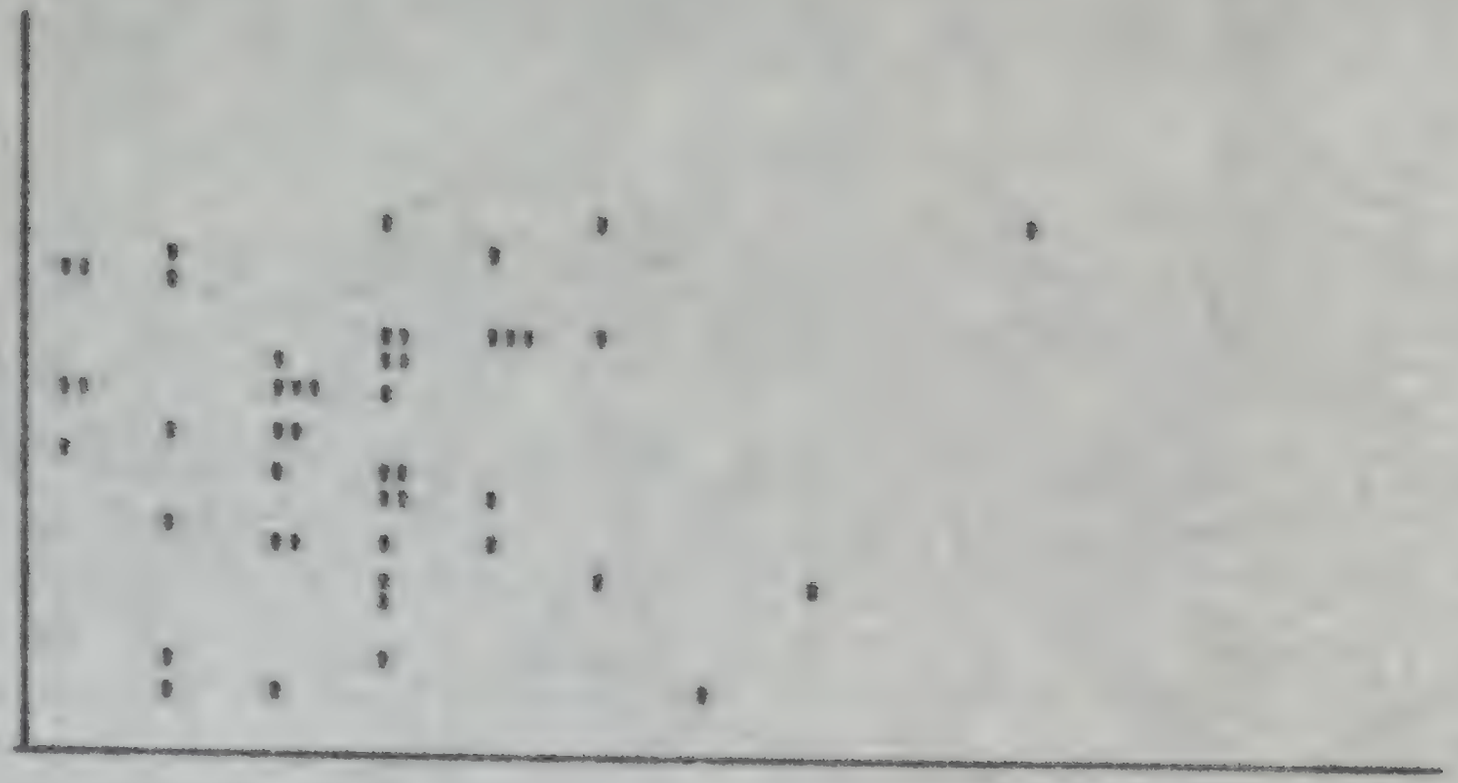
3. Scatter Diagram Showing Relationship Between Scores on Considerate and Inconsiderate Items on the Paper-Pencil Situations Test When Only Two Classes Were Used



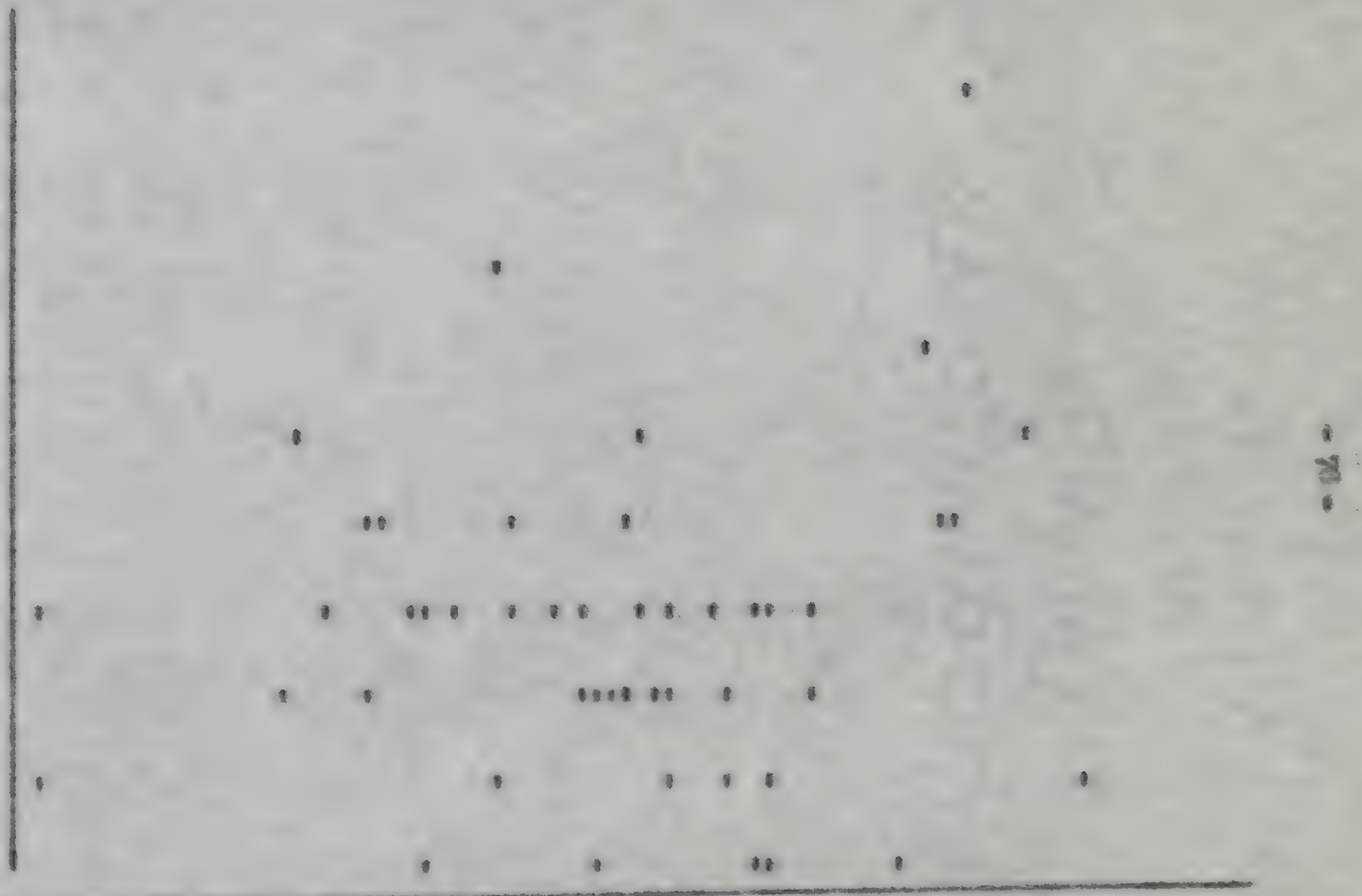
4. Scatter Diagram Showing Relationship of the Overall Scores on Questionnaire One and Scores on Authoritarian Items of the Payne-Purcell Situations Test



5. Scatter Diagram Showing Relationship Between Overall Scores on Questionnaire One and Scores on Considerate Items of the Hemphill-Coons Situations Test



6. Scatter Diagram Showing Relationship of Instructors Ratings and Scores on Considerate Items of the Paper-Pencil Situations Test



7. Scatter Diagram Showing Relationship of Instructors Ratings to Authoritarian Items on Paper-Pencil Situations Test

Interpretation of Findings

1. From Table A it can be seen that midshipmen did to a moderate extent tend to choose the same people for all three types of leaders. This is evident by the correlation coefficients which range from .40 to .83. Such a finding suggests that midshipmen do not tend to think of leadership as being specific to the situation but rather as a general characteristic.

2. Table B indicates that instructors ratings in this unit have a very low relationship to choices of combat (.34) and politician (.43) types of leaders and practically no relationship to choices for the administrative (.04) type. It is interesting to know that the relationship between combat and instructors ratings (.34) is lower than that between politician and instructors ratings (.43). Such a finding might suggest a tendency of superiors to give the highest ratings to those having a tendency to curry favor. Correlation coefficients computed for results obtained on the second questionnaire and instructors ratings only bear out the findings of the first administration of the form.

3. Also from Table B, it can be seen that there is practically no relationship (.04) between choices made for any of the types of leaders on questionnaire one and cruise ratings for the year 1948. In the 1947 cruise ratings, however, there is a very low relationship (.12). It would be expected that the relationship found for each year would be the reverse. This table also indicates that instructors

ratings have a very low relationship to cruise ratings (.15 and .31 for the years 1947 and 1948 respectively).

4. In Table C it can be seen that there was a moderate tendency for the group to make the same choices for administrative (.85) and politician (.71) types of leaders and desired friends. In choosing the combat type of leader, however, there was only a low tendency to make the same choice as for friends (.55). This table also shows that there is practically no relation between instructors ratings and friend choices of the group.

5. Table D shows the reliability of the nominations questionnaire forms used (.90), which is considered very good. This table also shows the results of an investigation to find the extent to which ratings made by instructors and nominations by associates were related to academic grades. The table shows that instructors tend to a moderate extent (.65) to rate those people high who stand high in academic achievement (this coefficient is probably too low inasmuch as ratings during March 1949 were correlated with class standing for the school year 1948). Nominations by associates show only a very low relationship (.40) to class standing (this also is probably too low for the same reason).

6. Scatter diagrams 2, 3, 4, 5, 6, and 7 indicate that there is very little to no relationship between scores obtained on the paper-pencil situations test and scores obtained on the questionnaires or any of the superiors ratings. Such a finding is evidenced by

inspection of the patterns of tally marks, or no patterns in this case, of the diagrams presented. Scatter diagram 2 shows clearly that there is no relationship even between considerate and authoritarian classes of the test. If the assumption underlying the construction of the test is valid, that is, good leaders will accept considerate items and reject the authoritarian items, then it seems logical that there should be a negative relationship between the two classes of scores. This same finding is borne out again in scatter diagram 3. Although it appears that there is a slight negative relationship here, a positive relationship was desirable inasmuch as the weighting procedure was reversed in arriving at the scores used on the horizontal axis of this diagram. These findings suggest that persons may be authoritarian and at the same time considerate or that they may be considerate of superiors as well as inferiors. Such findings are not believed illogical. It appears possible that an authoritarian type of person may also at times be considerate. Also, a person considerate of superiors might also be considerate of inferiors.

7. Although not presented here similar results were obtained from the scores of the passive, ego-defensive, and do-nothing classes of the situations test and confidence scores when compared to instructors ratings and nominations. Scores obtained on the passive, ego-defensive and do-nothing classes did not discriminate between individuals to a sufficient extent to be considered of value.

In addition to these findings an investigation was made to find out whether the midshipmen would have made the same choices on the questionnaire if the results were to be used for administrative purposes. This showed that only one man out of a group of forty-one said he would have made different choices. This assumes that the choices would be made anonymously.

The conclusions and recommendations of this study are presented in the final chapter.

CHAPTER VI

CONCLUSIONS AND RECOMMENDATIONS

Summary

The purpose of this study was to find out if three selected criteria might be of use in evaluating military leadership potentialities. Two of these, nominations by associates and ratings by superiors, were developed through what is known as the "reputational technique" of developing leadership criteria. The third criterion was developed through what is known as the "work-sample" technique. Each of the criteria were applied in an attempt to measure the leadership potentialities of midshipmen in the NROTC Unit at The Ohio State University. The conclusions of this study are given below.

Conclusions

In the analysis of the results of a leadership study such as this, the value or worth of the techniques and criteria used can be concluded definitely only by a validation study which permits comparison of test results with performance in the field. Even here there will be difficulties since there is no clearly accepted criterion of good leadership. When an adequate criterion of leadership has been found, test results may be validated against it. Therefore, results of this study can be judged only on the basis of the interrelationships of the three criteria used.

If, for example, an equally high degree of relationship had been found to exist between all three criteria, then the conclusion could have been drawn that all of them were measuring the same thing and therefore that they were interchangeable. Which one to use would be

decided on the basis of ease of administration. However, until accepted criteria of good leadership are available it would not be known what the tests were measuring.

On the other hand, if it had been found that there was no relationship between any of the criteria then the conclusion could be drawn that all of them were measuring something different and unknown, or perhaps that they measured nothing at all. If some relationship had been found, then it could have been concluded that they were measuring some of the same thing but one was measuring more of it or something else in addition, or one is a more efficient measure than the other. Again what is being measured remains unknown because of the absence of validating criteria.

It is clear that ultimately the usefulness of the tests used here can be determined definitely only by a validation study. Evaluation of results must necessarily be based on the interrelationships found. This will allow tentative conclusions in regards to the extent to which they measure the same thing. Definite conclusions can be made only in regards to technical construction such as reliability and discriminability, lack of either of which will make a test invalid. Based on the above considerations, conclusions concerning each criterion measure are as follows:

1. The nominations technique appears to be one method of evaluating military leadership. Although it is not known definitely just what is being measured with this technique it can be said

that the midshipmen tended only to a moderate extent to base their judgments on friendship when choosing a combat type of leader (r = .55); tended only to a low extent to base their judgments on academic achievement (.40); and, tended only to a low extent to nominate those persons good or poor, as rated good or poor by superiors (r = .34).

This technique is not considered capable of being used alone as a selection device but it does appear useful when applied to supplement superiors ratings. It could show cases of wide disagreement between associates choices for a eminent leader and superiors ratings which would indicate a need for further observation by superiors. On the other hand, if choices by associates and superiors ratings are in agreement, certainly, one could be more confident of the evaluations.

It is not considered important in using the nominations technique to ask for choices of the three types of leaders as was done here. The midshipmen tended to make the same choices for combat, administrative, and politicism types, (see Table A, page 70), and in addition tended to base their judgments on desired friends for the latter two types of leaders.

The nominations technique is reliable and gives enough discrimination among individuals in a group to be satisfactory.

2. Ratings made by superiors are very dubious measures of military leadership. These ratings appear to be based to a con-

siderable extent on academic achievement (r = .65). In addition, they are known frequently to be unreliable although the reliability of the ratings used in this study was not checked.

Although academic achievement may be one factor in leadership it is not considered that it should be as heavily weighted as found in this study. This high relationship between academic achievement and instructors ratings may be caused by the fact that instructors usually observe midshipmen only in the classroom situation.

3. The paper-pencil situations test as used in this study is an unsatisfactory measure of military leadership potentialities. On three classes of scores there is little discrimination between individuals. On the two other classes, considerate and authoritarian, scores do not seem to indicate anything as they show no relationship (Scatter Diagram 2). The assumption underlying this test, that is, good leaders will accept the considerate items and will reject the authoritarian items, appears to be invalid. If this assumption were true then a negative relationship should have been found between scores on these two classes. There are two other possible solutions however. The situations may not be stated clearly enough, thereby allowing persons to read in interpretations, or, the midshipmen may have answered the items in what they thought to be the approved Navy way.

Recommendations

In addition to superiors ratings it is recommended that the reputational technique, using associates nominations for developing a criterion of military leadership potentialities, be used on an experimental basis in a NROTC unit. Further experimentation is necessary when using associates nominations to find out the attitude of the group to this technique over a period of time and where the results are to be used for administrative purposes. When using a nominations questionnaire such as was used in this study it is believed necessary to be extremely cautious in its administration to insure its anonymity.

In addition to the reputational technique using associates nominations it is recommended that the "work-sample" technique, using operational and administrative situations, also be used on an experimental basis in these units. Evaluation of leadership potentialities of individuals in planned leadership situations would afford one check on the results obtained by the reputational technique when associates nominations and superiors ratings are used. Suitable situations could be set up, for example, by an assessment board of three officers, and used in a manner similar to that used by the OSS during the recent war. In some of the classes, for instance, when problems arise they could be given to groups of five or six persons to work on and arrive at a solution. This could be done with or without assigning a leader. Similarly during certain gunnery, seamanship, or military drill appropriate leadership situations could be set up by anyone who had read the OSS report

of leadership evaluation, and in addition had a little imagination. It is believed that there are a number of situations already set up in [illegible] units at the present time which would allow leadership evaluation but are being used for evaluation of training in certain technical skills.

Two techniques are recommended then, for use on an experimental basis, in developing criteria of military leadership potentialities in a [illegible] unit. These are the reputational technique using associates nominations and superiors ratings and the "work-sample" technique with operational and administrative situations. When results are obtained from these two techniques a validation study should be made to compare results with performance in the field.

APPENDIX I

Copy of Nomination Questionnaire One

Date Hour

This group has been selected to take part in a study that has to do with the problems of leadership; this part of the study is completed; DO NOT SIGN YOUR NAME OR IDENTIFY YOUR PAPER IN ANY WAY. You are being asked to make certain choices of leaders or non-leaders from among your classmates. No one will know or care who made which choices. But it is essential for the scientific study of the leadership problem that you make your choices the way you honestly think.

When you are through fold your paper and place it in the box here on the desk.

Here is what you are to do:

I On the roster of your classmates attached cross off the names of those you do not know.

II A. Suppose you and one of your classmates are aboard a PT boat during wartime. Your classmate is in command. The two of you are the only officers aboard. You have as a mission to put several Navy men on an enemy island at night. Who from among the Junior class of Midshipmen would you prefer to be in command of the PT boat. Make three such choices in the order of your preference:

1.
2.
3.

B. In the same situation as given above who would you definitely NOT want to be in command of the PT boat. Make three such choices in the order of your certainty of not wanting them.

1.
2.
3.

III A. On the cruise, which you anticipate going this summer, who from among the Junior class of Midshipmen would you prefer to be ~~your~~ section leader. Make three such choices in the order of your preferences. (Note: You may, if appropriate, renew some or all of the same names in problems II, III, and IV, however, keep each particular situation clearly in mind while making the choices.)

1.
2.
3.

B. In the same situation as given above who would you definitely ~~NOT~~ want as your section leader. Make three such choices in the order of your certainty of not wanting them.

1.
2.
3.

IV A. Suppose the Captain of this NROTC Unit requested that your class select one man to come to his office weekly to discuss matters having to do with the class interests. Who would you suggest this be? Make three such choices in the order of your preferences.

1.
2.
3.

B. In the same situation as given above, who would you definitely ~~NOT~~ want this to be. Make three such choices in the order of your certainty of not wanting them.

1.
2.
3.

Copy of Examination Questionnaire Two

Note

This (group) has been selected to take part in a study that has to do with the problems of leadership; this part of the study is anonymous; DO NOT SIGN YOUR NAME OR IDENTIFY YOUR PAPER IN ANY WAY. You are being asked to make certain choices of leaders or non-leaders from among your classmates. No one will know or care who made which choices. But it is essential for the scientific study of the leadership problem that you make your choices in the way you honestly think.

When you are through fold your paper and place it in the box here on the desk.

Here is what you are to do:

II A. Suppose you and one of your classmates are aboard a PT boat during wartime. Your classmate is in command. The two of you are the only officers aboard. You have a mission to put several Navy men on an enemy island at night. Now from among the Junior class of Midshipmen would you prefer to be in command of the PT boat. Make three such choices in the order of your preference:

1.
2.
3.

B. In the same situation as given above who would you definitely ~~NOT~~ want to be in command of the PT boat. Make three such choices in the order of your certainty of not wanting them.

1.
2.
3.

III A. On the cruise, which you anticipate going this summer,

who from among the Junior class of Hitchimmon would you prefer to be your section leader. Make three such choices in the order of your preference. (Note: You may, if appropriate, choose some or all of the same names in problems II, III, IV, and V, however, keep each particular situation clearly in mind while making the choices.)

1.
2.
3.

B. In the same situation as given above who would you definitely NOT want as your section leader. Make three such choices in the order of your certainty of not wanting them.

1.
2.
3.

IV A. Suppose the Captain of this NROTC Unit requested that your class select one man to come to his office weekly to discuss matters having to do with the class interests. Who would you suggest this be? Make three such choices in the order of your preference.

1.
2.
3.

B. In the same situation as given above, who would you definitely NOT want this to be. Make three such choices in the order of your certainty of not wanting them.

1.
2.
3.

V A. Who from among the members of the junior class would you like best to have as your friend? Make three such choices in the order of your preference.

1.
2.
3.

B. Who from among the members of the junior class would you definitely not want to have as your friend? Make three such choices in the order of your certainty of not wanting them.

1.
2.
3.

VI Assuming the information obtained on this questionnaire were to be used by your superior officers (IT WILL NOT BE) would your choices in the above situations still be the same?

Yes _____

No _____

Copy of
Sanford-Campbell Paper-Pencil Situations Test

Date _____ Hour _____

Name _____

This questionnaire is designed to see how you would diagnose and handle social situations you are likely to encounter. The answers that you make will be kept confidential.

The questionnaire concerns 21 social situations. For each situation there are five possible solutions. You are asked to study each situation, then think about each one of the five solutions. You are to decide for each solution whether it is a good or a poor idea. If you think the solution is good, that the course of action is definitely desirable, mark the answer sheet in the 1 space for that solution. If you think the course of action is probably desirable, mark the 2 space for that solution. If you are undecided about the action, mark the 3 space. If you think the action probably should not be taken, mark the 4 space. If you are sure that the action is definitely undesirable, mark the 5 space.

For each solution; then

1 - definitely desirable
2 - probably desirable
3 - uncertain about it
4 - probably not desirable
5 - definitely not desirable

Using the special answer blanks, mark the 1, 2, 3, 4, or 5 space for each solution to each situation.

You are a unit commander. One of the best men in your unit enters your office and requests a transfer. He appears very disturbed and will offer no adequate reason for his request. You are very busy at the moment and do not have time for a long discussion. Consider the following courses of action:

1. Promise to recommend his transfer at the earliest moment.

2. Send him to the Medical Test. to see a psychiatrist.

3. Set a definite time for him to see you when you can discuss the matter fully.

4. Ask him to prepare and submit a letter stating his reasons for requesting transfer.

5. Refuse his request pointing out that he has no reason for such a request.

Several of your men have been consistently reporting for duty just a few minutes late. The time lost is not a serious matter but other men in the group have been quick to notice this lateness. Consider the following courses of action:

6. Do not fuss about the situation until it creates a more definite problem.

7. Call the men into your office and discuss the reasons for their lateness.

8. Take immediate disciplinary action at the next offense.

9. Post a notice emphasizing the hours of duty.

10. Call the unit together to discuss the problem.

You have just received a letter complimenting your unit on its excellent showing at a recent inspection. Consider the following courses of action:

11. Post the letter on the bulletin board.

12. Call the group together and add your compliments to those contained in the letter.

13. Improve the unit still more by pointing out some minor deficiencies you have noted.

14. Do nothing except file the letter.

15. Relax a bit in your efforts to improve your unit.

Your unit of 60 men is to be cut in strength by one-half. You are given an opportunity to suggest names of men for transfer. Consider the following courses of action:

16. Ask each man to indicate whether or not he wishes transfer.

17. Pick every other name at random from a roster thus being completely impartial.

18. Transfer those men who have been in the unit the shortest length of time.

19. Transfer those men who have been in the unit the longest length of time.

20. Call supervisors together and discuss each name in turn, even though it takes several hours.

Your supervisor has just indicated great disapproval of the way you have been doing your job. He offered no explanation. This disapproval has come to you as a complete surprise. Consider the following courses of action:

21. Go immediately to his office and ask him why he disapproves your work.

22. Seek the advice of fellow officers concerning how you might improve your work.

23. Ask for an immediate transfer.

24. Do nothing but work harder.

25. Pay no attention to him. He probably was just in a bad mood.

One of the men in your unit comes and tells you that his chief is "out to get him" and that his notes are "plotting against him." Consider the following:

26. Call the chief in and tell him to watch his step.

27. See that the man is examined by a psychiatrist.

28. Bawl the man out for being overly sensitive.

29. Tell the man to forget it, he's making a mountain out of a mole-hill.

30. Call in his chief and let him and his chief have it out.

An aviation gunner in your outfit reports severe headaches every time he flies. The medical department can find nothing wrong with

him. He comes to you to request assignment to duty not involving flying. Consider the following courses of action:

31. Berate the man for being yellow and send him back to duty.

32. Give him a man-to-man talk about the necessity of courage in the Navy.

33. See that he gets to see a psychiatrist.

34. Help him get duty not involving flying.

35. Recommend a medicine to cure his headaches.

One of your men is reported to you for drunkenness and fighting ashore. You know that two days previously this man received word that his small son had died. Consider the following courses of action:

36. Treat the man as you would any other man reported for this offense.

37. Tell the man to forget it.

38. Give him some punishment but make it very light.

39. Ignore the whole thing.

40. Tell the man you understand how he feels but that he still must conform to discipline.

Your unit has been challenged to a ball game by another unit. Your unit is new and has no organized ball team. Consider the following courses of action:

41. Forget the matter for the time being.

42. Order your unit to organize a team.

43. Present the challenge to your unit and see what happens.

44. Order one of your subordinates to organize a ball team.

45. Post the challenge where your men can see it and say nothing.

Your ship is heading into Pearl Harbor after six months at sea. Your men are naturally expecting to get ashore and they have elaborate plans for shore activities. A day out of Pearl Harbor you get orders to put back to sea. Consider the following courses of action:

46. Simply give the necessary orders to your men and let them figure out what has happened.

47. Call your men together, tell them what has happened, tell them you are disappointed too, then get back down to business.

48. Call your men together. Let them in griping about how the ship is being treated, then carry out the orders.

49. Tell your men what has happened. Lecture them on the nature of duty, then carry out the orders.

50. Call your men together and ask them what should be done.

You have been having trouble with the discipline of your men. There have been numerous violations of minor regulations. Consider the following courses of action:

51. Call the group together and ask for more careful observation of regulations.

52. Threaten to make punishment stronger if the rules are not obeyed.

53. Abolish all rules except those which you have no power to abolish.

54. Pick out one man and punish him severely as an example to others.

55. Consider the problem as one much larger than poor discipline and try to get at the roots of it.

You have a man in your group who appears very timid and insecure. You believe that he is a very capable individual but that he is prevented from assuming greater responsibility because of being timid. Consider the following courses of action:

56. Encourage him whenever he turns in a good job.

57. Ask that he be transferred from your unit because the Navy has no place for a timid man.

58. Have him act as squad leader everytime the unit has practice close order drill.

59. Assign him more and more responsibility whether he wants it or not.

60. Give him a job where he can work alone.

One of your men asks you a question about your unit's job that you can not answer at the moment. Consider the following courses of action:

61. Frankly admit that you do not know the answer.

62. Tell the man that you do not have the time to discuss the question today and ask him to come back tomorrow.

63. Tell the man where he can go to find the answer to the question.

64. Try to answer the question the best that you can.

65. Admit that you do not know the answer to the question but promise to look it up and let him know as soon as possible.

An enlisted man who usually does a good job has failed to perform an assigned duty in an acceptable manner. His poor performance has resulted in your group receiving an unnecessary criticism. Consider the following courses of action:

66. Call the man in for an immediate reprimand.

67. Forget the incident and hope that it does not occur again.

68. Post a notice describing the incident so that others in the group may know who was responsible for the group's criticism.

69. Call the man in for a friendly chat in an effort to find out what was responsible for his poor performance.

70. Make a private investigation of the probable factors

that would explain the man's behavior before deciding on a course of action.

You have just come aboard a ship as a new junior officer. Less than a week after your arrival you are subjected to a moderately embarrassing practical joke at the hands of one of your men. Consider the following courses of action:

71. Punish him immediately in order to establish proper respect.

72. Call him in and let him know that you will not tolerate practical jokes where you are in charge.

73. Do nothing but wait for an opportunity to subject him to a more embarrassing joke.

74. Retain your dignity by ignoring the joke.

75. Act as if you were very angry but do nothing.

You have just been ordered to a new billet. It is a very important assignment as far as you are concerned. You are to be head of the unit and wish to establish the best working relations with others in the organization. Consider the following courses of action:

76. Take it easy the first few weeks in order to learn all the ropes.

77. Seek all the helpful advice you can from all the others in the organization.

78. Introduce some of the methods you have learned in your previous assignments within the first few days.

79. Take in from the very first and show your subordinates that you know more about running the outfit than they do.

80. Let the organization alone as long as it runs itself satisfactorily.

You are the commanding officer of a small unit. One of your men, Smith, complains about another man, Jones, has been telling unfavorable stories about him. He wants something done about it. Consider the following courses of action:

81. Send for Jones and tell him that Smith has complained about his behavior.

92. Tell Smith that he is acting like a baby and to forget all about it.

93. Tell Jones to not tell him that he must stop telling stories about others.

94. Investigate the situation in order to find out why Jones was acting as he was.

95. Call both Jones and Smith into your office and let them air their grievances.

Your unit has had to work extra hours during the last nine weeks in order to meet a deadline. Now, the amount of work to be done demands only about 1/4 of the time available. You are anxious to retain all your men because you expect much more work in the near future. Consider the following courses of action:

96. Tell your men the situation and outline a program of "busy" work.

97. Give everybody extra liberty.

98. Ask your men to work slowly and "appear" busy.

99. Devote the extra time to general military training such a close order drill.

100. Do nothing; just let the men work out their own adjustment.

One of your most capable subordinates frequently assumes more responsibility than you think desirable. You wish to correct this tendency but want to retain the wholehearted cooperation of the subordinate. Consider the following courses of action:

101. Tell him frankly whenever he assumes too much responsibility.

102. Ask him to check with you before he makes certain decisions.

103. Call him into your office and have a man-to-man talk about the matter.

104. Wait until he makes a serious blunder and then point out the limits of his responsibility.

15. No action.

Your immediate superior has given you a task to complete which will require your unit to work several times as long and as hard as a similar unit next door. You have some reason to believe that the inequality might be an unintentional mistake on the part of your superior. Consider the following courses of action:

96. Go ahead with the work without protest.

97. Explain to your men the reason for the inequality in the amount of work they are doing as compared with the other unit.

98. Go to your superior and ask him to reconsider the work he has assigned your unit.

99. Go to the leader of the unit next door and ask him to help you out.

100. Ask your men to put out an extra effort in order that you can make a favorable impression on your superior.

You have received your first assignment as a newly commissioned Ensign. You are to be in charge of a unit that has for the last six months worked for a chief petty officer with many years practical experience. Consider the following courses of action:

101. Take over only those duties that the chief voluntarily gives up to you.

102. Ask that the chief be transferred immediately.

103. Let the chief know on the first day that you are boss.

104. Get together with the Chief and work out what your duties will be.

105. Learn the details of the chief as quickly as possible before doing anything else.

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